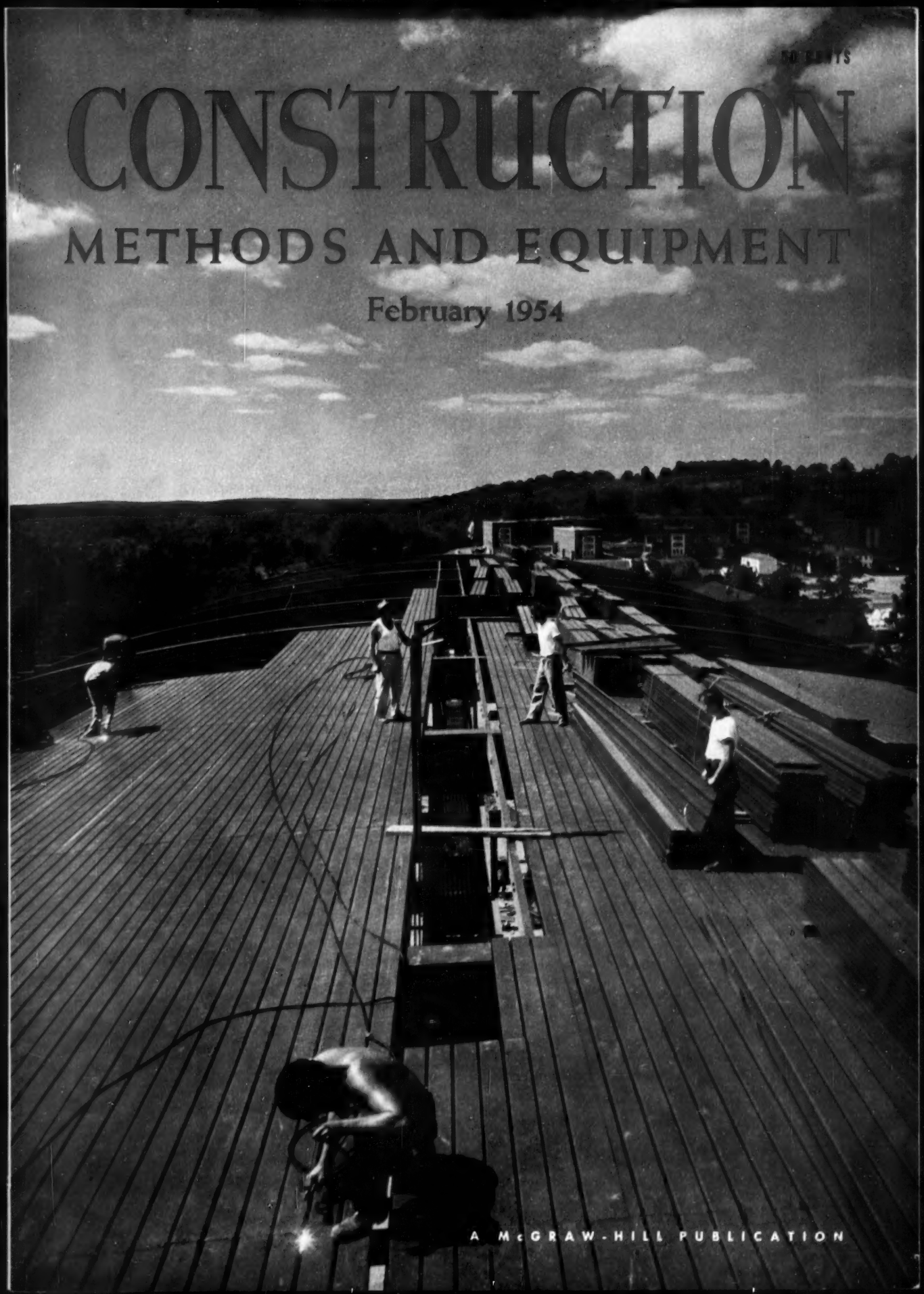
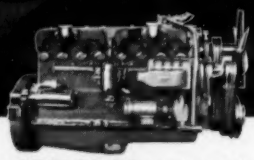
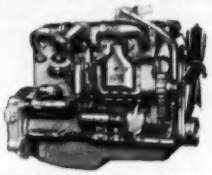

50 CENTS
CONSTRUCTION
METHODS AND EQUIPMENT
February 1954
A McGRAW-HILL PUBLICATION

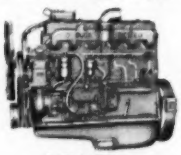
BIG Displacement Buda Diesels



8-DAS-1125 Supercharged
350 HP at 2100 RPM



6-DAS-844 Supercharged
280 HP at 2100 RPM



6-DA-779
185 HP at 2080 RPM

GIVE YOUR EQUIPMENT THESE MONEY-MAKING ADVANTAGES:

Install or specify Buda Dyna-Swirl Diesels in your scrapers, dozers, trucks and tractors and get the *competitive edge* these powerful, long-life engines can bring you. There's a Buda Diesel for every type of earthmoving and construction equipment. See your Buda Engine Distributor for complete details or write for Bulletin 1526.

- **$ 12 to 18% MORE HORSEPOWER at normal operating speeds . . . more reserve power for heaped loads**
- **$ 10 to 17% more useable torque . . . greater lugging ability . . . less shifting . . . faster round trips**
- **$ 6000 or more operating hours between overhauls . . . lower cost per hour of operation**
- **$ Exclusive Dyna-Swirl Combustion . . . more power per gallon of fuel . . . lower fuel cost**
- **$ Smooth, quiet operation . . . less exhaust fumes and smoke . . . less vibration . . . greater operator comfort and efficiency**

BUDA
COAST TO COAST
FACTORY EXPERIENCED
SERVICE AND PARTS

THE BUDA CO., HARVEY, ILL., DIVISION OF ALLIS-CHALMERS MANUFACTURING CO.

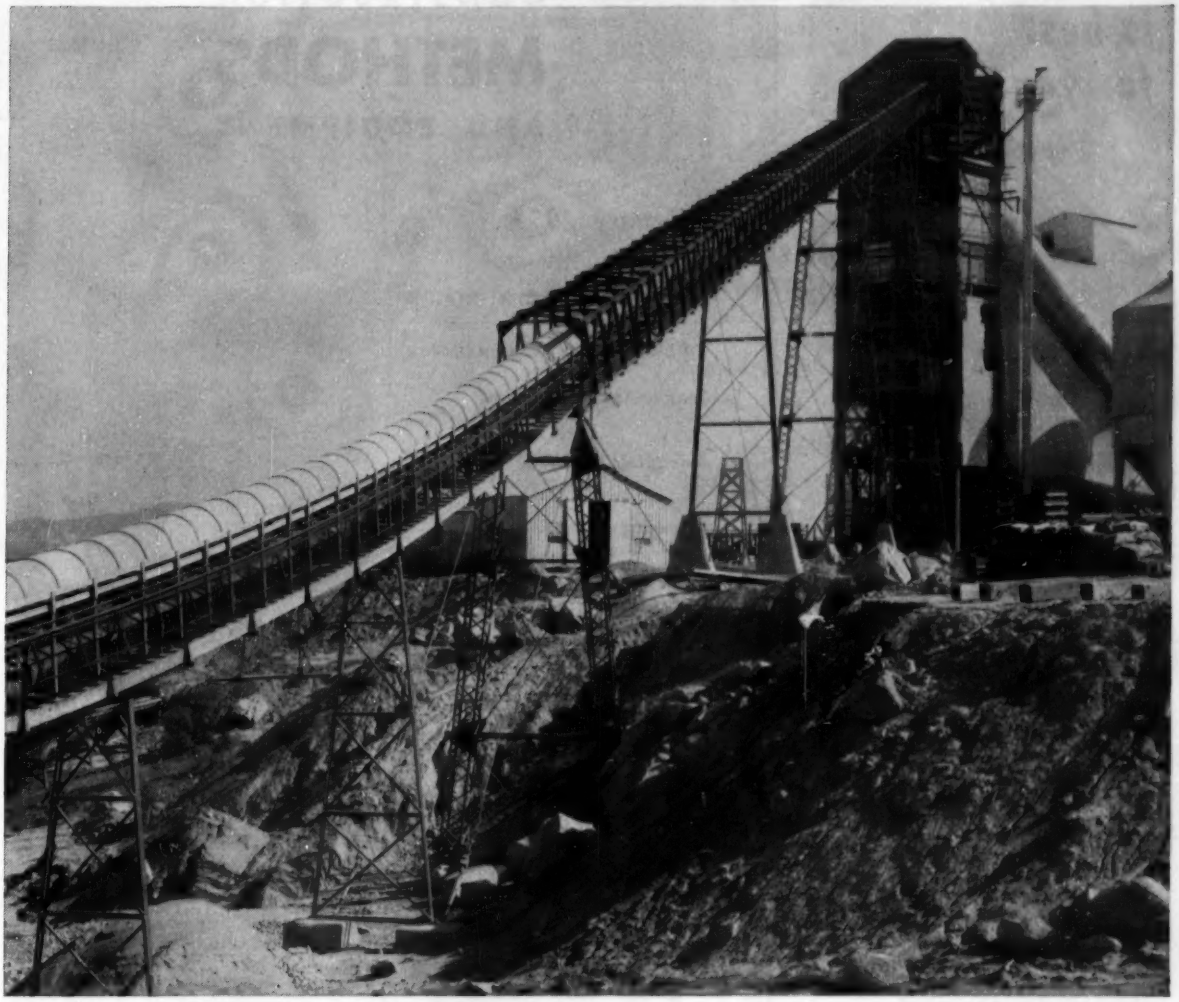
BUDA

a Power-Full and Dependable Engine FOR EVERY NEED

BC-2

Manufacturers of Material Handling Equipment, Lifting Jacks, Maintenance of Way Products, Earth Drills and Diesel and Gasoline Engines

RESEARCH KEEPS **B.F.Goodrich** FIRST IN RUBBER



After two million tons, a new job for this cord belt

THAT'S just one section of the 3300-foot conveyor system on the Folsom Dam project. A series of belts, like a bucket brigade, deliver 550 tons of aggregate an hour from bunkers across a river to the cement batch plant you see in the background.

In choosing the belts, engineers knew the ordinary type could not handle the entire job because of the sharp 139-foot lift up to the screening tower. They needed a belt that was strong, yet flexible for the long, steep climb, so a B. F. Goodrich *cord* belt was selected.

This B. F. Goodrich belt is made of plies of parallel cords that run lengthwise. Each cord is completely surrounded by rubber—no cross threads tie them together. The parallel cords supply the extra strength, yet are flexible so that troughing is natural, belt keeps centered on idlers, spillage is held to a minimum.

And because of the cord belt's ability to withstand impacts, cutting, and heavy loads, the belt in the picture is expected to carry the 2,000,000 tons needed here, and then be moved to another construction site for many more years of useful service.

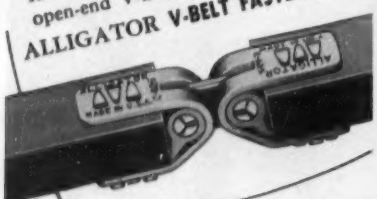
Your B. F. Goodrich distributor can tell and show you why BFG cord belts are able to give you this kind of service consistently (not just once in a while) in quarries, ore mines, and on construction jobs where severe operating conditions require the best and most modern conveyor belt construction for the most dependable, economical performance. *The B. F. Goodrich Company, Dept. M-180, Akron 18, Ohio.*

B.F.Goodrich
INDUSTRIAL PRODUCTS DIVISION

WHICH V-BELT is best for you?

If the correct size of endless V-Belt is not readily available, or if you have to tear down machinery to install, then the best belt to use is open-end V-Belting fastened with

ALLIGATOR V-BELT FASTENERS



★ In this way you can make up V-Belts in *any length* to fit *any drive* the fast economical way — V-Belts that perform exceptionally well.

★ In contrast to link-type belts these ALLIGATOR fastened V-Belts have just *one* strong joint . . . *stretch and follow-up maintenance are reduced to a minimum.*

ALLIGATOR INTRODUCTORY V-BELT DRIVE UNITS contain V-Belting, Fasteners and Tools — everything you need in one compact package to make up V-Belts quickly. Available in sizes A, B, C & D.

Ask for Bulletins V-215 and V-216
Order From Your Distributor

FLEXIBLE STEEL LACING COMPANY
4699 Lexington Street, Chicago 44, Illinois

ALLIGATOR
V-BELT FASTENERS

Volume 36
Number 2

CONSTRUCTION METHODS AND EQUIPMENT

Established 1919

February 1954

Publisher R. F. BOGER

Editor HAROLD W. RICHARDSON

Senior Associate Editor
HENRY T. PEREZ

Managing Editor
IRA F. ANGSTADT

Associate Editors
New York: RALPH H. LEWIS
San Francisco: L. L. WISE
Washington: V. B. SMITH

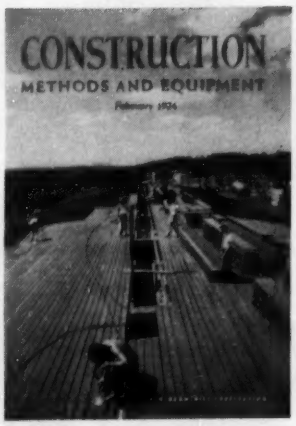
Assistant Editor
Layout: NELLE FITZGERALD
Assistant: AUDREY BARRY

Editorial Secretary:
GLORIA HUSSEY

Business News
Manager: ELSIE EAVES

Domestic News Bureaus:
ATLANTA • CLEVELAND
HOUSTON • DETROIT
SAN FRANCISCO • WASHINGTON

Foreign News Bureaus:
LONDON • FRANKFURT
MEXICO CITY • PARIS
TOKYO • MANILA • SAO PAULO



On the Cover . . .

Steel roof decking goes on fast when it comes in handy interlocking sheets like these, easily placed by two men followed by a welder who joins sheets to the purlins. Being placed here are Wheeling Tri-Rib roof decking panels on the new fieldhouse for the University of Connecticut, by the City Iron Works, Hartford. Steel deck gets a cover of insulating board and built-up roofing.

An editorial index of articles published in Construction Methods and Equipment during 1953 is available to readers and libraries. Copies will be mailed free of charge—only upon request. The index has been published separately, does not appear in any issue of the magazine.

Member ABC and ABP

Published monthly by McGraw-Hill Publishing Co., Inc., James H. McGraw (1860-1948) Founder.

Editorial, Executive and Advertising offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. Donald C. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph B. Smith, Vice-President and Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions: Address correspondence to Construction Methods and Equipment—Subscription Service, 330 W. 42nd St., New York 36, N. Y. Allow ten days for change of address. Subscriptions are solicited only from persons engaged in construction or in supplying the construction industry. Position and company connection must be indicated on subscription orders.

Single copies 50¢. Subscription rates—United States and possessions $3.00 a year; $4.00 for two years; $5.00 for three years. Canada $4.00 a year; $6.00 for two years; $8.00 for three years. Other Western Hemisphere $10.00 a year; $16.00 for two years; $20.00 for three years. All other countries $15.00 a year; $25.00 for two years; $30.00 for three years. Re-entered as second-class matter July 14, 1949, at the Post Office at New York, N. Y., under the Act of March 3, 1879. Printed in U.S.A.

Copyright 1954 by McGraw-Hill Publishing Co., Inc.—All Rights Reserved.

6x36 WS PREformed Right Lang Lay
Monarch Whyte Strand with IWRC

What's unusual about this machine?

This is a 6 x 36 PREformed rope, made up of 265 wires. That means 265 individual moving parts.

Because any wire rope is a complicated piece of machinery, it must be precision built.

There are 8 different sizes of wire in this rope — each drawn to exacting specifications for material and size.

Outside wires are one size. Inside wires are another. Core and filler wires are still other sizes.

All wires are cold-drawn to precise diameters so they will fit with snug uniformity into the structure of each strand.

Each wire is protected with lubricant applied during fabrication of the rope.

Macwhyte makes a thousand and one ropes to meet the needs of every type of equipment. Each is built with the exacting care that long, low-cost service demands.

Prompt recommendations from Macwhyte engineers are readily available without obligation.

MACWHYTE WIRE ROPE

THE RIGHT ROPE FOR YOUR EQUIPMENT

Ask for G-15 Handbook

MACWHYTE COMPANY
2941 Fourteenth Avenue, Kenosha, Wis.

Manufacturers of Internally Lubricated PREformed Wire Rope, Braided Wire Rope Slings, Aircraft Cables and Assemblies, Monel Metal, Stainless Steel Wire Rope and Wire Rope Assemblies. Mill depots: New York Pittsburgh • Chicago • St. Paul • Fort Worth Portland • Seattle • San Francisco • Los Angeles • Distributors throughout U.S.A.

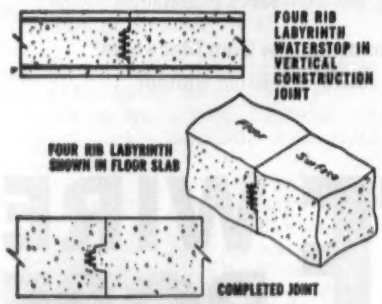
1089

just nail 'em in...
pour your concrete

AND FORGET ABOUT SEEPAGE
WITH LABYRINTH
WATERSTOPS

● Concrete shrinkage *can't* cause leakage between pours when you're protected by ribbed and grooved polyvinyl plastic Labyrinth Waterstops in the joints. Economical? You bet . . . No special forms, no metal fins to bend or tear . . . no maintenance cost, AND . . .

INSTALLATION COST IS VIRTUALLY ZERO!



WATER SEALS, inc.
9 SOUTH CLINTON STREET
CHICAGO 6, ILLINOIS

For Further Information and Sample—Clip the Coupon!
Patent applied for

WATER SEALS, INC.,
9 South Clinton St., Chicago 6, Illinois
Send full information and sample.

Name_____
Company_____
Address_____
City_____ Zone____ State_____

Pay Dirt in This Issue

February, 1954

Grouted Rails Pin Sliding Railroad Bank 54

Truck-mounted rotary drill puts down 64 vertical holes for soldier-beam piles so bank can be cut back on highway widening job. To collar holes high up and far back, drill truck is set on elevated frame carried by trailer.

Machine Bores Tunnel Through Shale 57

Five-man tunnel crew advances 7x12-ft bore as much as 4½ ft per hr with converted slope-driver. Machine's two propeller-like cutter arms dig overlapping holes; chain cuts out tangents to leave smooth, oval bore.

What Am I Bid? 3-Day Auction at Boston 90

The complete story on how 473 pieces of earthmoving equipment, new and used, were auctioned in a big-city hotel. Equipment, serial numbers and prices listed.

The Construction Dollar: Helps to Spending Wisely 116

Seven important steps are: Advance planning; job scheduling; timely expediting; timely use of labor and machines; waste elimination protection; cost analysis.

Good Concrete in Cold Weather 62

The rules are easy but cannot be ignored when weather turns cold. Valuable guide on mix temperatures.

Concrete Mixing and Placing 66

Highway and airport batch sites designed for large capacities; one-, two- and three-stop plants discussed.

Jeep-Powered Equipment Can Do Many Jobs 83

Economy on light jobs is when these little wagons get busy with welders, compressors, backhoes, hoists.

Concrete "Pot-Shots" Line Difficult Tunnel 86

Flocrete pneumatic placers, using a pass-over track, transport and place concrete in 4,630-ft tunnel job.

Follow-Up on New Equipment 105

Field report from owners, operators and servicemen who tell what they think of the Caterpillar No. 6 Shovel.

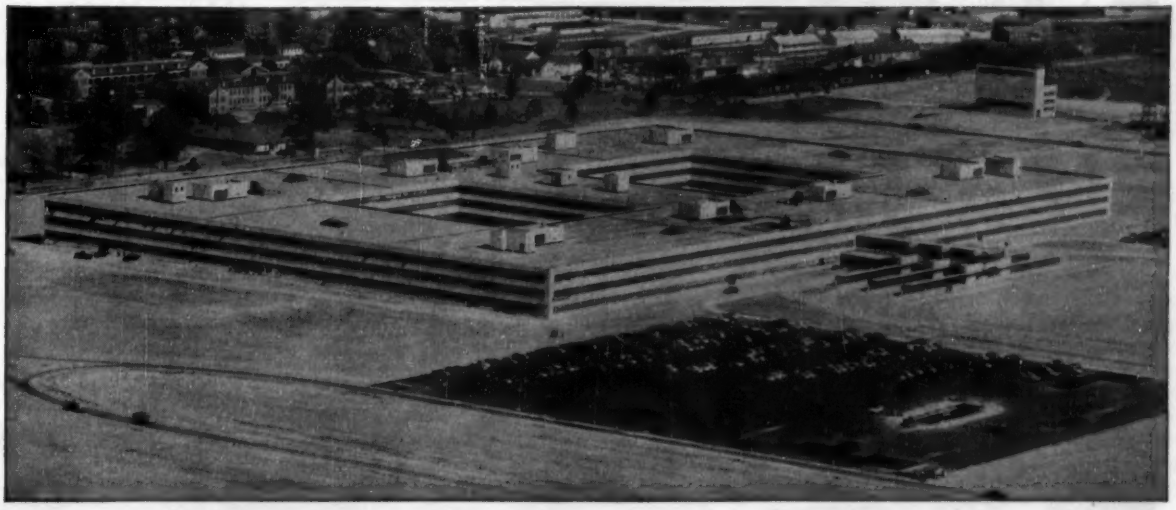
Construction Equipment News 160

Two full pages of pictures and descriptions of loaders; also previews of machinery, tools and equipment.

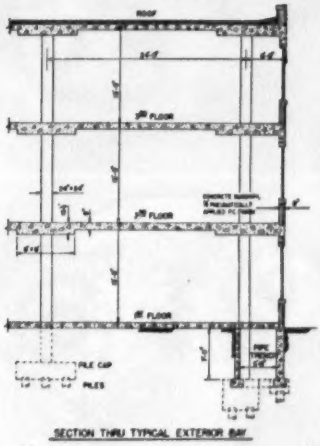
Job Talk	12	Big Equipment Accidents Filmed	74
It's Your Business	26	Hole-In-One Operation	113
Picture of the Month	40	Contractor-Labor Relations	132
Construction News in Pictures	44	Tricky Pile Job	140
Editorial	53	Sales and Service	144
Mobile Scaffold Saves Rigging	61	Triple Economy for Ford in 1954	156
Fast Work on Big Yardage	64	Methods Memo	196

NEXT MONTH | To pave 3½ mi of 24-ft concrete slab 9 in. thick without using road forms, contractor designed and built his own rig. In March: Details of its construction, operation and output.

HOME OF THE Army Dollar



Economy-Minded Army Planning Cuts Cost by $4-Million on 14-Acre, All-Concrete Structure, with 1¼-Million sq. ft. of Usable Floor Space

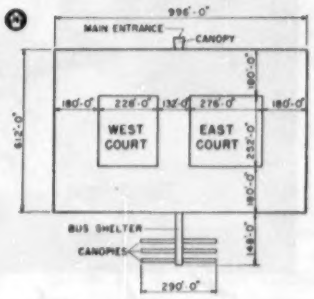


SECTION THRU TYPICAL EXTERIOR BAY

● New Finance Center at Fort Benjamin Harrison, near Indianapolis, second largest all-concrete administrative structure in the world, dwarfed only by the Pentagon, now houses Army Finance Operations, formerly scattered throughout the U. S.

Utilizing streamlined concreting methods, the 3-story, flat-slab, reinforced-concrete structure, with 1¼-million sq. ft. of usable floor space, was completed ahead of schedule, in spite of strikes, cyclone and blizzard. A total of 83,000 cu. yds. of concrete, pumped to all points within the 14-acre building area, was placed at a yard-a-minute pace.

Here is functional design, enduringly expressed in concrete, for utmost stability, durability, fire-safety and lowest annual cost — completed for $4-million less than original $23-million estimate —quality concrete, every yard of it, produced with over 100,000 barrels of Lone Star Cement.



PLAN VIEW

FINANCE CENTER, U. S. ARMY:
Fort Benjamin Harrison, Indianapolis
E. J. BEAN, Brig. Gen., U.S.A., Commanding
Supervision: **U. S. ARMY CORPS OF ENGINEERS**, Chicago
Architects-Engineers: **HARLEY; ELLINGTON & DAY**, Inc., Detroit
Ready-Mix Lone Star Concrete—Joint Venture:
READY MIXED CONCRETE CORP. • **HESTON CONCRETE CO.**
CARLSEN CONCRETE SUPPLY; all of Indianapolis
Masonry Units: **SPICKELMIER COMPANY**, Indianapolis

General Contractors—Joint Venture:
SHERRY-RICHARDS CO., Chicago
C. E. YOUNGDAHL & CO., Inc., Long Island City, N. Y.
CORBETTA CONSTRUCTION CO.; New York
JAMES McHUGH CONSTRUCTION CO.; Chicago
Contractor for Water Supply, Sewers, Railroad Siding:
CALUMET PAVING COMPANY, Zionsville, Indiana
Piling: **CASEY & CASE**, Detroit

LONE STAR CEMENTS COVER
THE ENTIRE CONSTRUCTION FIELD

LONE STAR CEMENT CORPORATION

Offices: ABILENE, TEX. • ALBANY, N. Y. • BETHLEHEM, PA. • BIRMINGHAM
BOSTON • CHICAGO • DALLAS • HOUSTON • INDIANAPOLIS
KANSAS CITY, MO. • NEW ORLEANS • NEW YORK • NORFOLK
PHILADELPHIA • RICHMOND • ST. LOUIS • WASHINGTON, D. C.

LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS: 18 MODERN MILLS, 136,000,000 SACKS ANNUAL CAPACITY

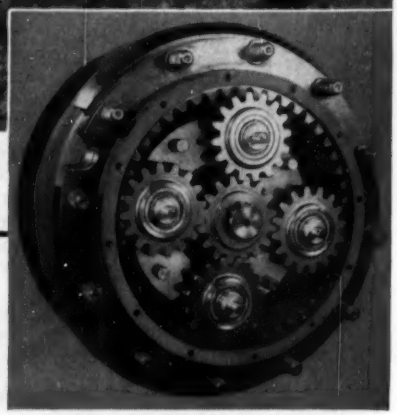
NEW 4-WHEEL DRIVE SHOVELOADER

TRADE MARK REG. U.S. PAT. OFF.

HEAVY-DUTY

★axle strain reduced 300% by planetary gears

One of the outstanding exclusive features in the new Baker-Lull 4-wheel drive SHOVELOADER is the use of 3 to 1 planetary gear reductions in each of the four wheels. This eliminates drive line failures by a 300% reduction of shock loading and strain to axle shafts, differentials, ring gears, pinions, transfer case and transmission. It also substantially reduces clutch wear. Other exclusive built-in features increase utility by providing natural digging action, improved operation in rough terrain, greater operating safety, mobility and general versatility.



Four planetary gears, with 3 to 1 gear reduction, coupled with 5.28 to 1 reduction in differential, provide 15.84 to 1 total axle reduction. Use of 4 planetary gears divides gear-tooth loading by a factor of 4, eliminating failure in gear assembly.

write for 8-page descriptive bulletin or ask your Baker-Lull distributor for demonstration.

Baker Lull

handling equipment

THE BAKER-LULL CORPORATION

Formerly the Lull Manufacturing Company

355 WEST 90th STREET • MINNEAPOLIS 20, MINN.

A Subsidiary of the Baker-Raulang Co., Cleveland 2, Ohio

You'll find the Head Protection for YOU

...and for every Job at

MSA

SAFETY EQUIPMENT HEADQUARTERS

M.S.A. TYPE K SKULLGARD

The most popular and accepted work hat!

Tough, laminated plastic composition safeguards workers from every head hazard. Perfect balance, light weight results in greater wearing comfort. Available in any of the lining styles illustrated below.

M.S.A. GLASS FIBER HAT

High pressure molded, this hat provides perfect head protection. Smooth contour design deflects falling objects and minimizes blows and bumps. Featuring the Snap-in-Adjustable lining, this head protector comes in the following stock colors: Red, White, Yellow, Green, Blue, Gray, Black.

M.S.A. SHOCKGARD

Maximum head protection in electrical-hazard areas—from high voltage contact and falling objects. Minimum protection tested at 10,000 volts. All-plastic shell—*no metal parts.* Special Web Cradle straps; one-unit leather lining.

M.S.A. TYPE B SKULLGARD

The Type B offers the best head protection available in cap-type style. Rigid peak, with reinforced beaded edge. Accommodates all linings except Snap-in-Adjustable.

MODEL T ALUMINUM HAT

Light, cool and comfortable. Ideal for those desiring a metal hat. Tough aluminum alloy resists blows from falling or flying objects. Rigid brim protects face, neck, shoulders. Snap-in-Adjustable lining only.

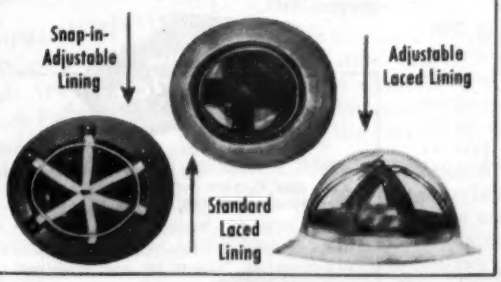
M.S.A. STREAMLINED FIREMAN'S HELMET

Designed for maximum head protection and freedom of movement. Laminated bakelite construction. High dielectric strength. Rubber-cushioned lining provides greater wearing comfort.

M.S.A. COMFO CAP

Combining lightweight comfort with head protection, the M.S.A. Comfo Cap is well-balanced, durable. Low crown design makes it ideal for low coal mining. Standard type lining only.

A CHOICE OF LININGS, TOO



M.S.A.'s complete line of hats and caps meets your every job, style, color, and lining needs. They are smart looking, light weight, comfortable, well-ventilated. They are designed for all service conditions, individual preferences. They have rugged strength and durability. Workers are safer, better satisfied when their head protection fits the job. Write for details.

Call the M.S.A. man on your every safety problem . . . his job is to help you.

MINE SAFETY APPLIANCES COMPANY
Braddock, Thomas and Meade Sts. • Pittsburgh 8, Pa.
At Your Service: 68 Branch Offices in the United States

MINE SAFETY APPLIANCES CO. OF CANADA, LIMITED
Toronto, Montreal, Calgary, Winnipeg, Vancouver, New Glasgow, N.S.
Representatives in Principal Cities in Mexico, Central and South America
Cable Address "MINSAF" Pittsburgh

B.F.Goodrich

"Universal tread prevents side-slip," construction foreman reports

THE Kessler Contracting Company does road construction work around Mount Carmel and Shamokin, Pennsylvania. Thirty trucks, 6 scrapers and 6 other units haul loads as heavy as 20 tons over hilly, rut-filled roads where tire skidding and side-slippage is a constant threat.

To avoid this danger, Kessler uses B. F. Goodrich off-the-road tires. Foreman Rufus Steiger (above, right) reports they prevent side-slip, give much better service than any other make of tire.

The B. F. Goodrich Universal tire grips with husky, wedge-shaped cleats. The cleats are non-directional to give positive traction in reverse or forward and to guard against slippage. You pull through the toughest jobs without wasting time and money on bogged-down trucks. And the tread is made of specially-compounded rubber that resists cuts and snags.

Kessler is able to recap its BFG tires twice—each recap saving the company hundreds of dollars—because of the extra-strong construction. Layers of strong, elastic nylon cords under the tread stretch together to protect the tire body from shocks and bruises. This patented nylon shock shield costs you nothing extra, yet gives you more original tire service, more recappable tires and more hours of service per recap, increased bruise resistance and less danger of tread separation.

See the complete money-saving line of B. F. Goodrich off-the-road tires at your retailer's store. The address is listed under Tires in the Yellow Pages of your phone book. Or mail the coupon.

Specify B. F. Goodrich tires when ordering new equipment

RESEARCH KEEPS B.F.Goodrich FIRST IN RUBBER

The B. F. Goodrich Company
Tire and Equipment Division
Department TO-355, Akron 18, Ohio

Please send me:

- ☐ Free catalog on B.F.Goodrich off-the-road tires
- ☐ Free booklet, "How to get more recaps out of truck tires"
- ☐ Name of my nearest retailer.

Name_____

Company _____

Street_____

City_____ Zone____ State_____

The COMBINATION makes the outstanding TRUCK CRANE

REMEMBER it takes *two* major pieces of equipment to make a good Truck Crane! A Feature that may look fine in the crane isn't worth much if you can't get it to the job when you want it—because of Carrier trouble.

You aren't buying a "Crane" and you aren't buying a "Carrier"—it isn't a type of drive or a method of control you want. You are buying versatility in material handling ability, high output and the maximum in mobility. That's what makes money in a Truck Crane. When you are figuring on a Truck Crane, weigh *all* the advantages of the unit as a whole. The Northwest Truck Crane has been designed to produce full efficiency with any attachment—Crane, Shovel, Dragline or Pullshovel.

Don't overlook Carrier details and don't be misled by selling statements that "carriers are all alike" and that "the same people build them". You will find other equipment may be often referred to as "A Good Crane" but Northwest is universally recognized as a leader for quality both in Crane and Carrier. We'd like to tell you in detail why and where the Northwest Truck Crane and Carrier are better.

IF YOU'RE INTERESTED in a Truck Crane, Truck Shovel, Truck Dragline or Truck Pullshovel let a Northwest Man go over Northwest advantages and leave with you the new Northwest Catalog describing both Crane and Truck.

NORTHWEST ENGINEERING COMPANY
1503 Field Building, 135 South LaSalle Street, Chicago 3, Illinois

Has Your Shovel Stood the ROCK TEST

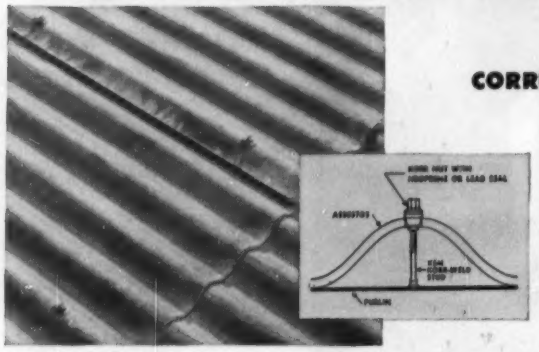
NORTHWEST

SHOVELS ● CRANES ● DRAGLINES ● PULLSHOVELS

A BRAND NEW APPROACH TO CONSTRUCTION FASTENING THROUGH KSM KORR-WELD STUDS

KSM KORR-WELD fastening methods, based on service-proved stud welding, simplify many construction applications. Fasteners become an integral part of the structure. They are strong, long-lasting, quickly and easily applied. Lower construction costs are the inevitable result of the unique advantages of Korr-Weld construction fasteners. KSM rolled threads provide extra strength and KSM precision-centered, solid flux assures a good weld every time.

FOR ROOFING AND SIDING FASTENERS...



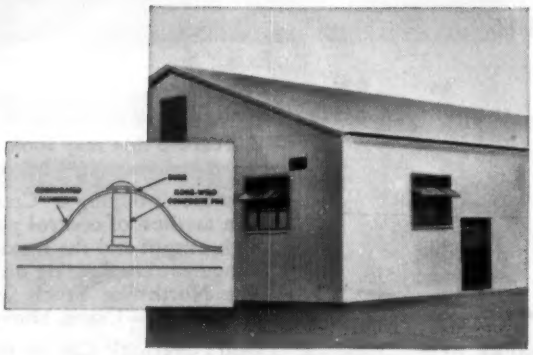
CORRUGATED ASBESTOS (Stud welding process 43.1)

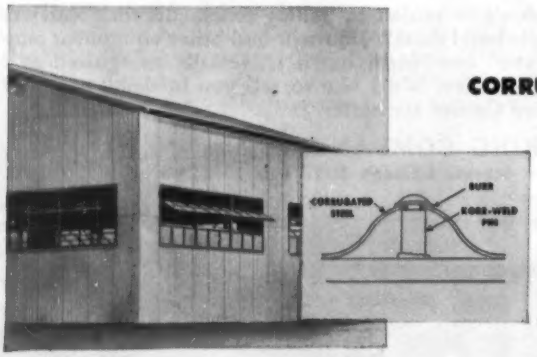
This Korr fastening method is based on a welded stud designed on cantilever principles to give a high safety factor in tensile loading and provide a more ductile fastening. The Korr side lap fasteners are installed from outside, need no special tools.

CORRUGATED ALUMINUM (Stud welding process 45.1)

This method is based on a unique bi-metallic stud. Steel stud-base welds to steel structure. Aluminum stud-section holds aluminum roofing or siding. Integral stud locator and scraper speeds application.

Simple, quickly-installed, self-tapping screw secures side laps.





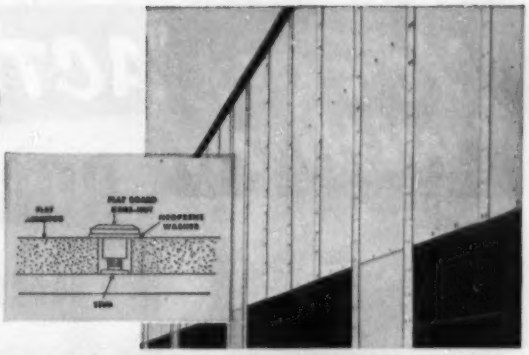
CORRUGATED STEEL (Stud welding process 44.1)

By stud welding, Korr-Weld Studs become an integral part of steel frame, making it one with the roofing and siding. Studs are quickly applied and corrugated steel is quickly riveted to studs; self-tapping screws hold side laps.

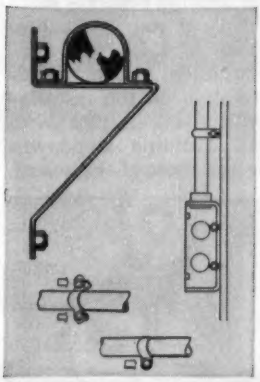
FLAT ASBESTOS AND INSULATION (Stud welding process 43.2)

KSM Korr-Weld method, quickly applied, provides strong, attractive fastening. Flat-head zinc-alloy Korr nuts secure material to studs.

Excellent also for curtain wall construction, fireproofing, metal lath installation, gunite reinforcement.



ELECTRICAL CONSTRUCTION



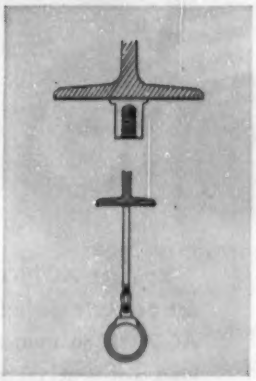
(Stud welding process 41.1)

KSM Stud welding to fasten conduit, wire ways and boxes. Method is fast, fastenings are secure. Eliminates detailed layout, drilling, tapping, throughbolting, and other expensive methods.

SPRINKLER AND PLUMBING INSTALLATION

(Stud welding process 49.1)

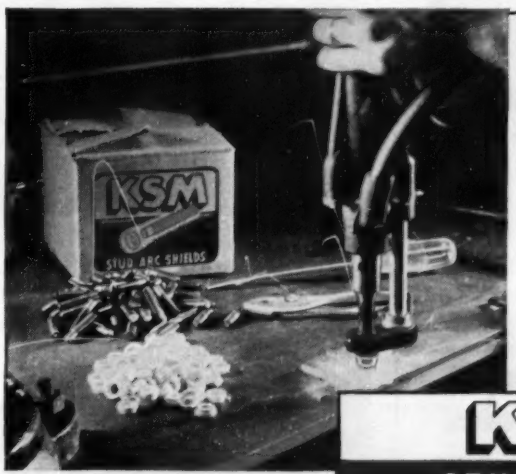
KSM Studs provide a strong and rapid method of hanging pipes from steel structures. Installations are neat, clean, low-cost.



HOW CAN YOU PROFIT FROM KSM KORR-WELD CONSTRUCTION METHODS?

A nationwide organization of application engineering is at your service to assist you in obtaining completely satisfactory results from the KORR-WELD method. Local distributors can supply studs and equipment as required.

Write for complete literature describing your particular needs.



KSM PRODUCTS, INC.
STUD WELDING DIVISION
MERCHANTVILLE, NEW JERSEY • MERCHANTVILLE 8-4160

Please send me information on the following KORR-WELD METHODS:

- ☐ Corrugated Asbestos
- ☐ Flat Asbestos and Insulation
- ☐ Corrugated Steel
- ☐ Electrical Construction
- ☐ Corrugated Aluminum
- ☐ Sprinkler and Plumbing Installation

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE_____ STATE_____

KSM
STUD WELDING

BETTER CONSTRUCTION THROUGH KSM STUD WELDING METHODS

You get "ACTION" with a... ROGERS TRAILER

You get ACTION in loading and unloading because they are properly designed by long experienced specialists; you get ACTION in maneuverability because of correct weight and load distribution; you get ACTION in faster road travel because alloy steel main members assure lightness with strength; you get ACTION in controlling the trailer under all conditions due to massive brakes of advanced design. And above all you get ACTION on the profit side of the ledger in exceptional freedom from repairs year after year.

These features are embodied in a complete line of trailers including one specifically adapted for every hauling service. Write or phone for our large illustrated catalog.

YOU GET MORE FOR YOUR MONEY IN A ROGERS TRAILER

EXPERIENCE builds 'em — PERFORMANCE sells 'em

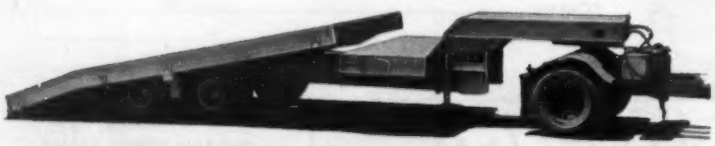
ROGERS BROS. CORP.

ALBION, PENNA. CABLE: BROSITES

Export Office: 50 Church St., New York 7, N.Y. U.S.A. Cable Address-Brosites

Distributed by

220 Orchard Street



Divided bed, tilt deck trailer with gooseneck.

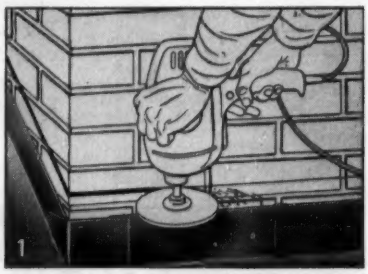
★ JOB TALK ★

...About Methods

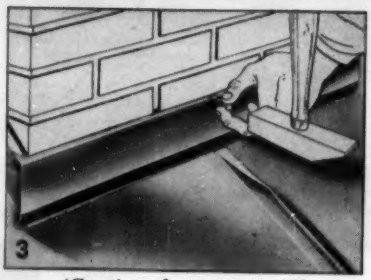
How to Install Chimney Flashing

SEALING A CHIMNEY and roof connection usually is the most critical job of a roof installation. And generally chimney and building are on separate foundations, yet must be kept in weather-tight contact in spite of wind, snow loads and settling. Sealing becomes more difficult when a chimney straddles both slopes of a roof.

Follansbee Steel Corp. sends along information on the installation of continuous flashing with terne metal, avoiding stepdowns and eliminating most of the seams.



After roof pans have been turned up to form the base flashing around a chimney, corners are fitted with corner patches. Then the roofer cuts a groove ½ in. deep around the chimney, 4½ in. above the roof line, with a ¼-in. grinding wheel in an electric drill *(Fig. 1)*.



(Continued on page 18)

the crane with the BOARDING HOUSE REACH

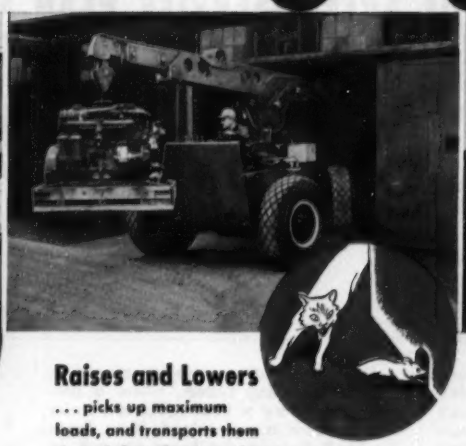
AUSTIN-WESTERN HYDRAULIC CRANE

with telescopic boom

It's the LIVE BOOM that puts the A-W Hydraulic Crane out front in the performance parade . . . live power with instant response for all boom movements . . . extending and retracting, raising and lowering, and rotating. Fingertip hydraulic control places the load exactly where it is wanted; handles delicate spotting jobs with superb precision. No other mobile crane has a boom so completely "alive". . . no other outdoor-indoor crane will handle so many jobs, so well.

SEE what it does -

Reaches Far, High
. . . changes boom length and boom angle quickly and easily while under load.



Raises and Lowers
. . . picks up maximum loads, and transports them through low-clearance doors.

Rotates 360°
. . . simplifies and speeds up many operations, especially when working in close quarters.

AUSTIN-WESTERN COMPANY

Construction Equipment Division · Baldwin-Lima-Hamilton Corporation

AURORA, ILLINOIS, U.S.A.

Power Graders · Motor Sweepers · Road Rollers · Hydraulic Cranes

AUSTIN-WESTERN COMPANY, 607 Farnsworth Avenue, Aurora, Illinois
Please send complete information and literature on the Austin-Western Hydraulic Crane.

Name .....

Title .....

Company .....

Street .....

City ..... Zone ..... State .....

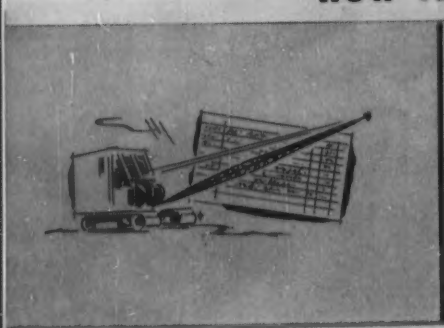
Other products: Power Graders, Motor Sweepers, Road Rollers

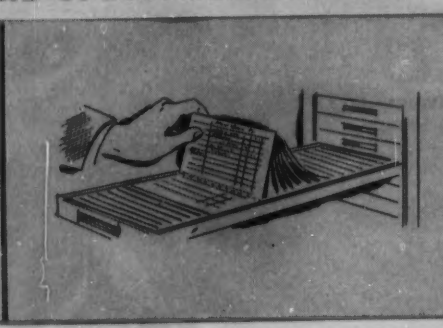
ANNO

Yellow Strand
SPEEDI-SERVICE
FOR WIRE ROPE USERS

Yellow Strand
SPEEDI-SERVICE
FOR WIRE ROPE USERS

HOW THE SPEEDI-SERVICE PLAN SERVES YOU...





1. File cards, describing each of your machines and its wire rope requirements are filled in by your Broderick & Bascom distributor with facts supplied by you. Wire ropes needed are ordered from stock from one of the ten regional Broderick & Bascom warehouses, ready for delivery when needed.

2. The registration cards are placed in an active filing system, where a permanent history of your equipment's wire rope needs is maintained. Your Broderick & Bascom distributor can tell, in an instant, what type and size of wire rope you will need for any machine.

3. When a line requires replacement, phone your Broderick & Bascom distributor. Tell him which machine needs the rope. He will refer to his records and fill your order immediately from his stock of long-lived Yellow Strand maintained for you!

UNCING

A NEW TIME-SAVING, MONEY-SAVING PLAN FOR EQUIPMENT OWNERS...

THE BRODERICK AND BASCOM *Yellow Strand* SPEEDI-SERVICE PLAN

Now you can insure immediate delivery of wire rope! Now you can increase equipment earning time, decrease down time! Now you can be sure of getting the right line at the right time!

Now you can save time and money with the Yellow Strand Speedi-Service Plan!

There's no extra cost, no obligation. All you do is have your nearby Broderick & Bascom distributor register your equipment. He will maintain an automatic filing system containing information on your wire rope needs.

Then when you need rope, just call, giving the machine make, model and the particular rope needed. The exact size, length and type will be obtained from your record file and the order will be filled from stocks controlled by these records. Immediate delivery is made according to your recorded instructions.

Start saving time and money with the Yellow Strand Speedi-Service Plan. Call your Broderick & Bascom distributor or mail the coupon — today!

YOU BENEFIT FOUR WAYS!

1. Your machines spend more time working, earning!
2. You keep fewer records!
3. You standardize on tougher, Yellow Strand Wire Rope!
4. Save time, labor and money!

SPECIFY

Yellow Strand®

FOR SAVINGS... SAFETY... SPEEDI-SERVICE

A PRODUCT OF

BRODERICK AND BASCOM ROPE CO.

ST. LOUIS, MO.

To Start Your Speedi-Service Plan Mail This Coupon

Broderick & Bascom Rope Co.
4203 Union Blvd. • St. Louis 15, Mo.

Gentlemen:

I'm interested in saving time and money with the Speedi-Service Plan.

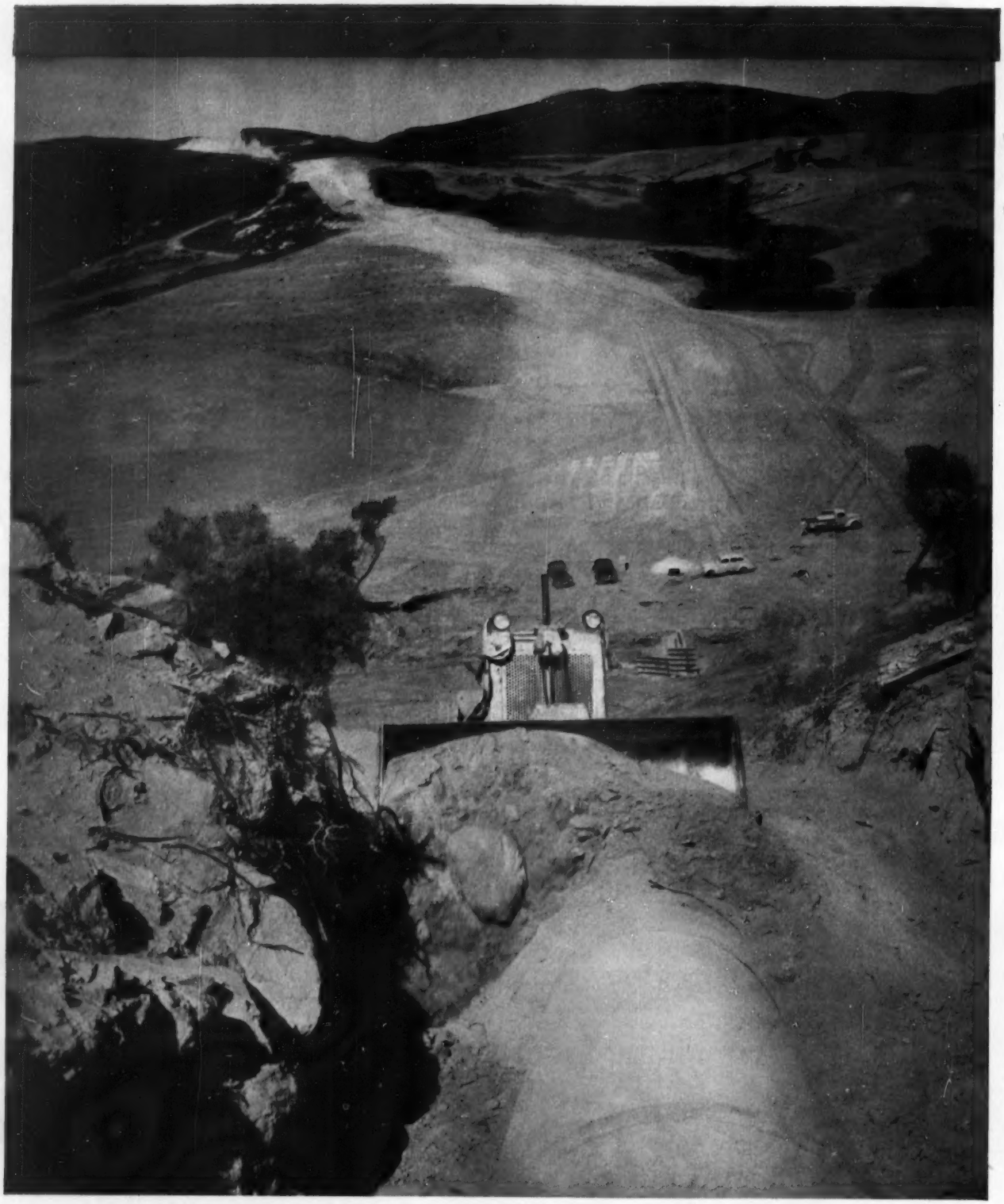
- ☐ Send me the folder describing the Speedi-Service Plan.
- ☐ Send me the Speedi-Service Equipment Registration Form.
- ☐ Send me the name of my Broderick & Bascom distributor.

Signed .....

Company .....

Address .....

City ..... State .....



TUNE IN:
METROPOLITAN OPERA
radio broadcasts
every Saturday afternoon.
See newspaper for
time and station.

TEXACO

REG. T.M.

TEXACO

IF THIS WAS YOUR 'DOZER, WHAT ENGINE OIL SHOULD YOU USE?..

THE RIGHT ANSWER IS:

that member of the *Texaco Ursa Oil* series specifically recommended for your engines and their operating conditions. You can have no better assurance of clean, top-notch performance and rock-bottom maintenance costs.

The famous *Texaco Ursa Oil* series is a complete line of Diesel and heavy duty gasoline engine lubricants especially refined to make engines give *more power* with *less fuel* over *longer periods* between overhauls. Thus, whatever the type, size or speed of engine, or fuel used, there is a member of the *Texaco Ursa Oil* series exactly suited to your operation—assuring maximum performance at minimum cost.

For hydraulic mechanisms, use *Texaco Regal Oil (R&O)*. It keeps systems free from sludge, rust and foam—assures smooth, trouble-free performance, longer pump and parts life. On open gears and wire rope, use *Texaco Crater*. It assures smoother operation, increases gear life . . . keeps wire rope strong longer.

Learn how the Texaco Simplified Lubrication Plan can *reduce to six* the number of lubricants needed to handle all major lubrication, save you time, mistakes and money. Just call a Texaco Lubrication Engineer at the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write: The Texas Company, 135 East 42nd Street, New York 17, N. Y.

Lubricants and Fuels
FOR ALL CONTRACTORS' EQUIPMENT

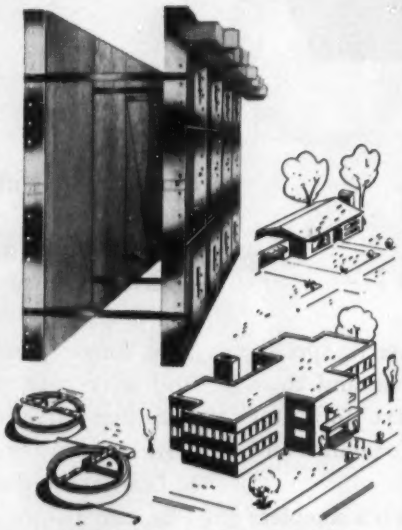
Question: *Why do so many successful contractors prefer UNI-FORM Concrete Forms?*

Answer: *No other method of concrete wall forming offers so many time, labor and material saving advantages*

UNI-FORMING Advantages:

- FAST...simple mechanical assembly —forms more contact area per man hour
- Alignment and bracing on 1 side only —saves up to 50% labor, materials
- Flexibility—UNI-FORMS form round, irregular, battered or straight walls with maximum economy
- Fast Job starts—ready to use when they're delivered on the job—save time
- FREE Engineering and Field Service ...layouts, details, on-the-job assistance for your men

Write for the new UNI-FORM catalog



UNI-FORM Concrete Forms Form Anything

RENT with a Purchase Option...

Try before you BUY

UNIVERSAL FORM CLAMP CO.

GENERAL OFFICES AND FACTORY: 1238 N. Kostner • Chicago 51, Illinois

OFFICES AND WAREHOUSES:

CLEVELAND, OHIO • BALTIMORE, MARYLAND • HOUSTON, TEXAS
SAN LEANDRO, CALIFORNIA • LOS ANGELES, CALIFORNIA

SERVICE WHEREVER YOU BUILD... COAST TO COAST

DISTRIBUTORS IN PRINCIPAL CITIES

Mr. UNI-FORM

Copyright 1954 by UNIVERSAL FORM CLAMP CO., Chicago 51, Ill.

JOB TALK . . . Continued from page 12

Cap flashing is cut and formed to go all around the chimney—cut and bent to go into the groove in the masonry *(Fig. 2)*.

As the cap flashing is inserted, it is wedged into place with masonry nails driven into the groove above it *(Fig. 3)*.

Finally, the finished flashing is calked with a suitable compound *(Fig. 4)*, and the weatherproof joint is completed.

Powder Tool Fastens Steel Road Forms

It's a traffic separation job. Steel forms are set and white concrete poured into them to create a traffic separator on Highway 52 near Indianapolis. Forms for the concrete are fastened to the existing concrete pavement with a Powder Power Tool Corp. Drive-It "400" cartridge-powered tool. Contractor was Vogel Construction Co., Indianapolis.

Insulated Tank Keeps Asphalt Hot

Williams Brothers, asphalt paving contractors of Ionia, Mich., frequently keep asphalt hot over night in a specially built 13,000-gal tank on a truck-trailer. The big tank is insulated with granular vermiculite, poured into the 2½-in. space between the tank and a 14-gage steel jacket surrounding it.

(Continued on page 24)

"How's the engine doing, Mr. Denti?"

We asked Mr. George J. Denti, Secretary-Treasurer of the Montuoro Contracting Corp., Bronx, N. Y., that question *twice* about the Cat* D13000 Engine in this Bucyrus-Erie crane with 65-foot boom and 1-yard bucket.

The first time was in June, 1952, when this picture was taken of the rig working on the Bronx River Parkway.

The second time we asked him was more than a year later — September, 1953.

Both times Mr. Denti's answer was the same: "We're *very* well pleased with its performance."

Again and again you'll hear similar reports from men like Mr. Denti who keeps a close check on costs and production. In rig after rig, Caterpillar power helps deliver *more* work at *lower* cost with less down time.

What's in it for you when you specify rugged yellow diesels for your machinery? Many advantages! For example, you get honest HP—the horsepower listed on the specification sheet is conservative, not the stepped-up rating of a stripped-down unit. You get steady production—day after day with a minimum of attention. What's more, you get low-cost production. These thrifty engines burn low-cost fuel without fouling. And if you need service, you get it fast — on the job — from your Caterpillar Dealer.

Next time you order replacement power or new machinery, specify Cat power. More than 150 manufacturers can supply these durable engines—in 12 sizes up to 500 HP — in their equipment. They're built for a long life of profitable production. Ask your dealer to *show* you proof!

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

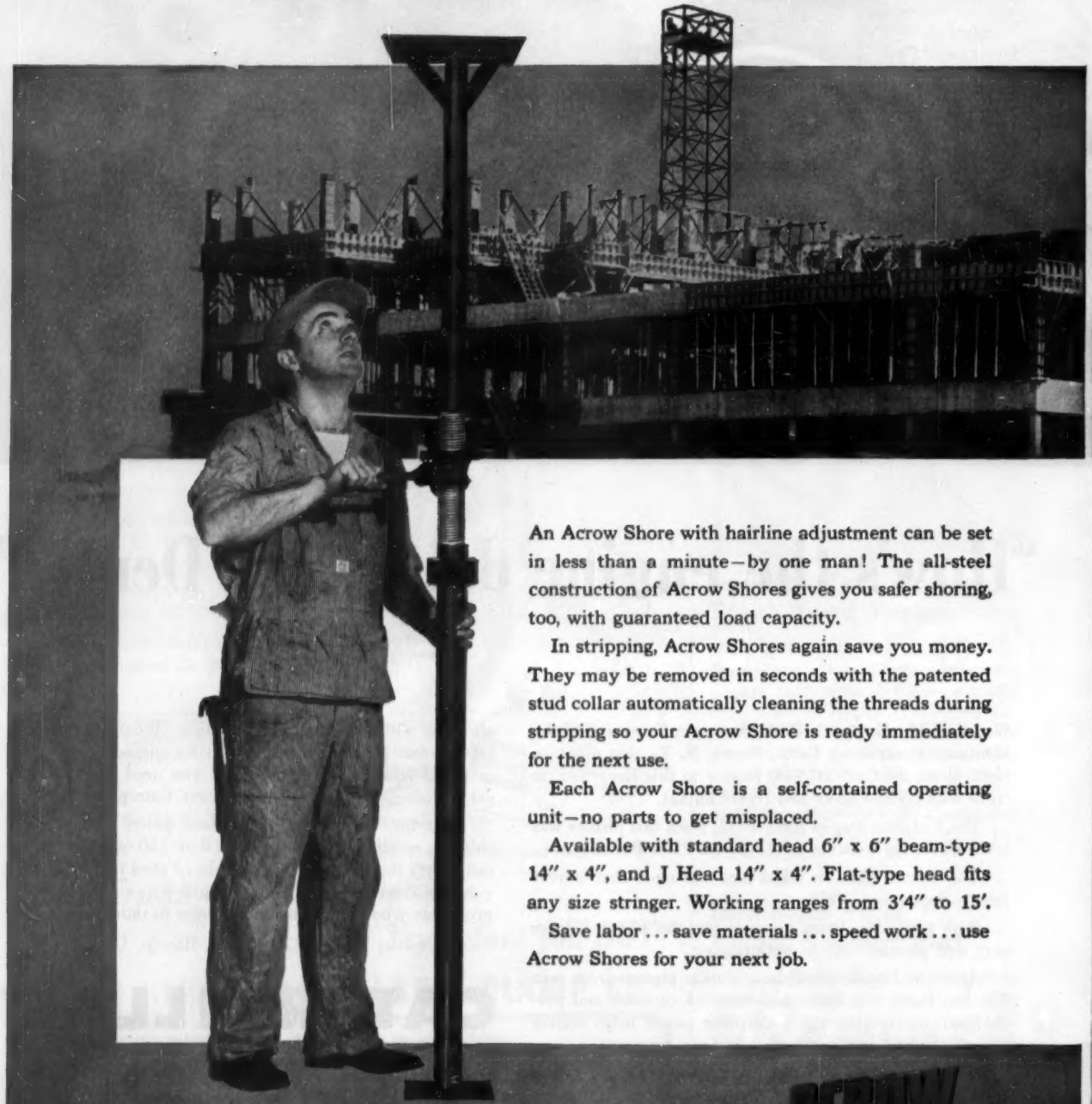
CATERPILLAR*

*Both Cat and Caterpillar are registered trademarks—®

SPECIFY CAT POWER FOR HIGH-PROFIT PRODUCTION

with ACROW ADJUSTABLE STEEL SHORES, You...

GET 'EM



An Acrow Shore with hairline adjustment can be set in less than a minute—by one man! The all-steel construction of Acrow Shores gives you safer shoring, too, with guaranteed load capacity.

In stripping, Acrow Shores again save you money. They may be removed in seconds with the patented stud collar automatically cleaning the threads during stripping so your Acrow Shore is ready immediately for the next use.

Each Acrow Shore is a self-contained operating unit—no parts to get misplaced.

Available with standard head 6" x 6" beam-type 14" x 4", and J Head 14" x 4". Flat-type head fits any size stringer. Working ranges from 3'4" to 15'.

Save labor . . . save materials . . . speed work . . . use Acrow Shores for your next job.

ACROW.....

UP FAST

Memorial Hospital, Dallas, Texas, built by Robert E. McKee, General Contractor, Inc., at approximate cost of $10,000,000. Mr. C. Brown, superintendent, used Acrow Shores on this project.

Write for free Bulletin today!

ACROW, INC.
Dept. CM-2
510 North Dearborn Street
Chicago 10, Illinois

UNITED STATES OFFICES

Chicago, Michigan 2-1010
New York, LExington 2-7595
Boston, DEvonshire 8-7174
Philadelphia, LOcust 7-5553
Atlanta, Emerson 3716
Houston, Underwood 8514
Dallas, Riverside 6051
Birmingham, 7-5151
Los Angeles, DAvenport 6-1428
San Francisco, ATwater 2-1442

ASSOCIATE COMPANIES

Acrow (Canada) Ltd., Montreal
Acrow Venezuela, S.A., Caracas
Acrow Brazil, S.A., Rio de Janeiro
Acrow Uruguay, S.A., Montevideo
Acrow Argentina, S.A., Buenos Aires
Acrow Peru, S.A. (Ingenieros), Lima
Acrow (Engrs.) Ltd., London
Acrow Engrs. (Pty.) Ltd., Johannesburg
Acrow Engrs. (Pty.) Ltd., Sydney

ACROW

ADJUSTABLE STEEL SHORES

THE WORLD'S LARGEST SELLING SHORE

The Wonder Grease for Concrete Forms

REGARDLESS of whether you use steel or wooden forms for concrete work — you can apply Globe Form Grease by spray, brush, or swab. This time-tested paste emulsion will reduce peeling and pitting to a minimum when forms are removed, and practically eliminate patching.

Due to its special adhering qualities, Globe Form Grease requires only a thin coating for utmost effectiveness. In fact, one gallon adequately covers approximately 200 square feet! And in addition — Globe Form is stainless, leaves a whiter smoother surface, and eliminates the need for painting.

Why not write for full particulars today? Once you use Globe Form Grease, you'll understand why engineers and contractors hail it as the "wonder grease" for concrete forms.

OILS *and* GREASES
for every purpose
DIESEL
STEAM
AUTOMOTIVE

Write for descriptive booklet of all Borne, Scrymser products.

BORNE SCRYMSER Since 1874

Our Laboratory Facilities are always at your disposal

BORNE, SCRYMSER COMPANY ELIZABETH, N. J. • CHARLOTTE, N. C.

Only a Hoe can do Special Excavating Jobs

Hoes are designed for digging below the level on which the machine is standing. However, unlike the dragline and clamshell, that also operate from on top, the Hoe has precision control and a powerful digging action.

A Hoe is free from "wet bottom" difficulties, stands on firm ground and works *away* from the excavation. A properly designed Hoe is a powerful excavator that can dig easily through hard clay, shale or rock. Moreover, because of the fixed length of boom, the dipper can be controlled precisely, resulting in smooth, straight side walls, level bottom and close-limit digging.

Because of these characteristics, the Hoe is ideally suited to certain types of work. Trenching for sewer, water, gas and cross-country pipelines is one of them. These trenches are dug through all types of ground conditions, must have straight side walls and level bottom and frequently are very deep. The precise control of the dipper and the ability to wade through tough digging make a Hoe a "must" on this kind of job.

Hoes are used extensively for excavating residence basements with square corners, level floors — practically eliminating hand trimming. The Hoe can dig the trench for the utility lines, too.

Hoes are available in a variety of sizes and capacities to handle a wide range of jobs and uses ranging from digging basements to pipelines. Illustrated is a "TL" Moto-Hoe in the ¾-yard class.

For excavating for footings for larger structures, big capacity Hoes are available to handle a high volume of dirt and still retain the precision of control necessary for this close-limit work.

Two requisites of good Hoe boom design are a gooseneck boom for maximum digging depth and one with a narrow upper section so the operator can see what he is doing.

The bucket should be so designed that it fills easily, even in tough digging, and dumps cleanly.

A Hoe can be a money-maker for a contractor. They are available mounted on crawlers or rubber-tire carriers.

(Advertisement)

IF IT'S A JOB FOR A HOE LORAIN HAS IT!

There are *some* excavating jobs that *only* a Hoe can handle. There are many others that *can* be dug efficiently with this versatile tool. This powerful, accurate digger can "get you out of a hole" by digging one where no other type of machine can.

Thew-Lorain builds a complete line of Hoe booms for use on all models in the line consisting of seven machine "Series" from ⅜ to 2-yard classes . . . on crawlers, Self-Propelled and Moto-Crane carriers. Lorain Hoe booms range from 14 to 25 feet in length with cutting widths of 24 to 62 inches . . . can dig up to 28 ft. deep. Too, you can interchange your Lorain Hoe with all the other booms available for each model.

If it's a job for a Hoe — big or small — let your Thew-Lorain Distributor prove why it's wise to select a Lorain.

***Here's How* With a Hoe!**

Send for this brand new pictorial book that illustrates jobs best handled by a Hoe. Big pictures of all 7 sizes of Lorains in action. Gives pertinent job data. Illustrates both crawler and rubber-tire models. Every contractor will find this a valuable reference. Write for your copy today.

THE THEW SHOVEL CO., LORAIN, OHIO

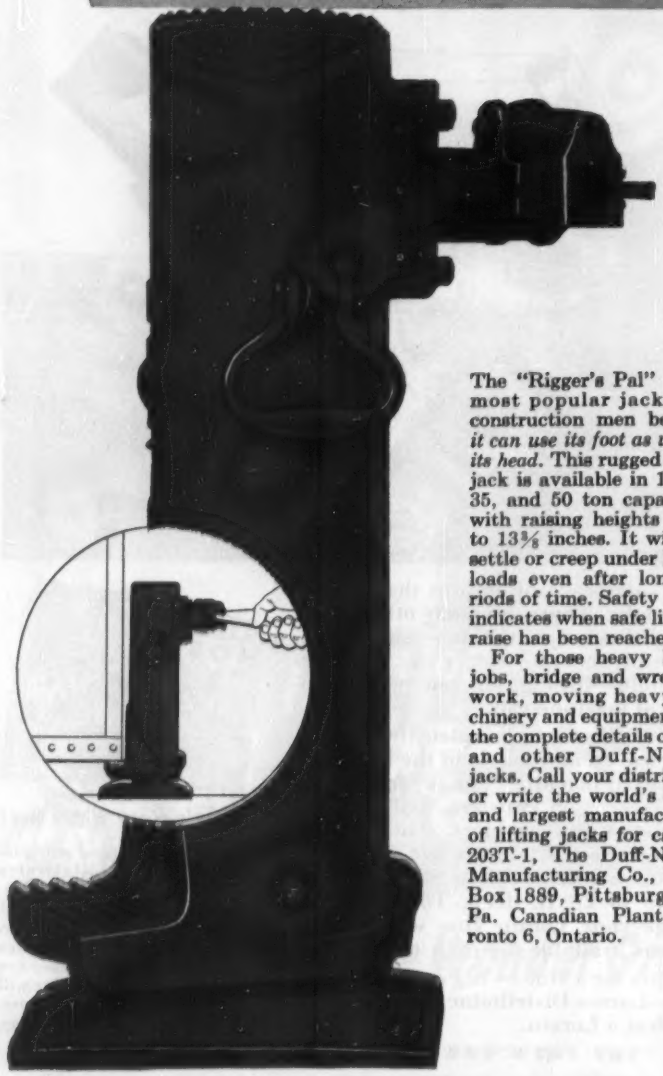
Ask your THEW-LORAIN DISTRIBUTOR for facts

Your local Thew-Lorain Distributor can help you in many ways. He will help you determine the right model, mounting and front end from the complete Lorain line. He will show you Lorains in action. He backs up your job with experienced service personnel and parts-in-stock. His facilities can add extra profits to every contract.

SEE THE LORAIN HOE IN ACTION!

THEW LORAIN.

Why the "Rigger's Pal" is the most popular jack with construction men!



The "Rigger's Pal" is the most popular jack with construction men because *it can use its foot as well as its head.* This rugged screw jack is available in 15, 25, 35, and 50 ton capacities, with raising heights of 10 to 13⅜ inches. It will not settle or creep under heavy loads even after long periods of time. Safety signal indicates when safe limit of raise has been reached.

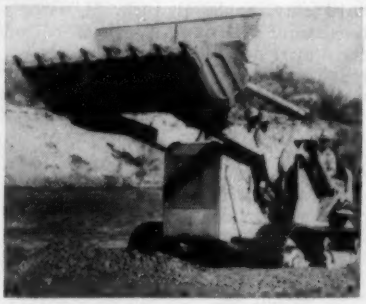
For those heavy lifting jobs, bridge and wrecking work, moving heavy machinery and equipment, get the complete details on this and other Duff-Norton jacks. Call your distributor or write the world's oldest and largest manufacturers of lifting jacks for catalog 203T-1, The Duff-Norton Manufacturing Co., P. O. Box 1889, Pittsburgh 30, Pa. Canadian Plant—Toronto 6, Ontario.

DUFF-NORTON
Jacks

"Giving Industry A Lift Since 1883"

JOB TALK . . . Continued from page 18

The two-compartment tank is 35 ft long and 8 ft in dia. Each day it is filled with about one day's supply of hot asphalt, then used for road spraying. If not all of it is used during the day, the insulated tank will keep asphalt hot till the next day. The tank was built by the Owosso Division of the Luther Corp.; vermiculite was supplied by the Zonolite Co.



Bigger Mouthful

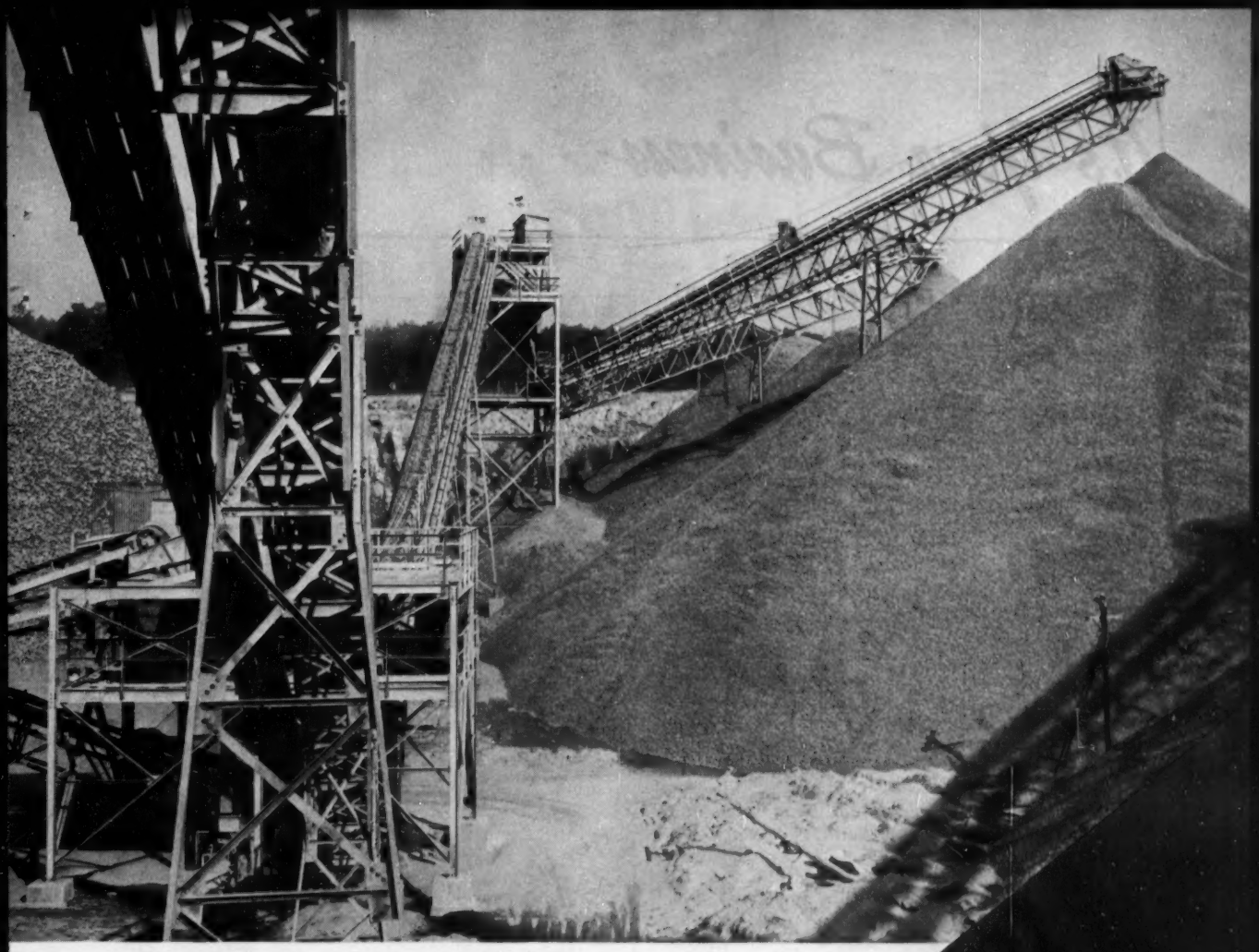
A Tracto-Shovel on an Allis-Chalmers HD-20 crawler was enlarged in capacity from 5 to 7 yd to handle river gravel from the Verde River in Arizona. Fisher Contracting Co., of Phoenix, added extra sides and a rear grill to the regular bucket to increase its load-carrying ability. The extra capacity speeded the job of moving 3,000 yd of gravel to divert the river for a new intake for the city of Phoenix water supply. The tractor operated in 3 ft of water.

Asphalt Coating Protects Steel Buildings

Light steel buildings are found everywhere in construction, on and off the job. A weather-resistant coating on the exterior can save many dollars in maintenance costs, if applied in time.

The Flintkote Co. suggests that an ideal way to protect such structures is to remove loose scale, grime and dust with a wire brush and paint the surfaces with a clay-type asphalt emulsion. The coating should be applied at the rate of about 3 gal per 100 sq ft.

When the asphalt coat has dried —at least a week after its application—a coat of asphalt-base aluminum paint should be painted over the asphalt at the rate of 1 gal per 100 sq ft. The aluminum coat will improve the appearance and reflect rays of the sun, making for a cooler interior.

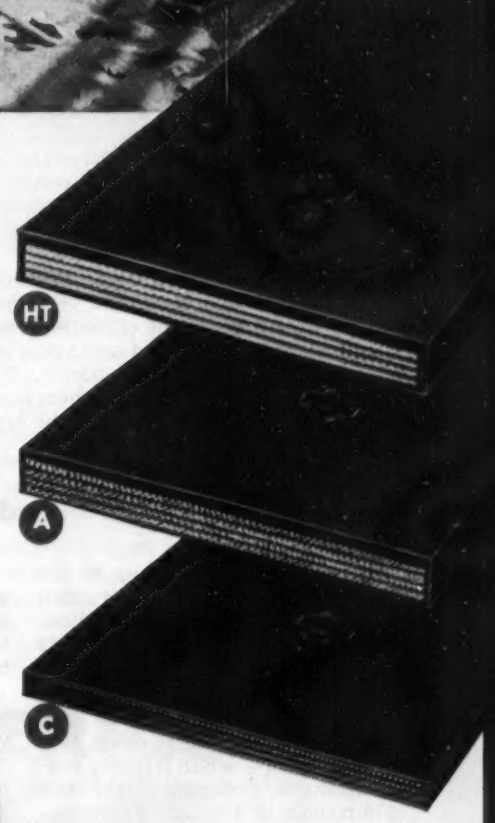


Thermoid Conveyor Belting cuts handling costs on every construction job

Thermoid Industrial Rubber Products — Quality Value Service

There's a Thermoid Conveyor Belt designed to lower your handling costs on every construction job. Here are three examples: HT For extremely abrasive materials such as granite, trap rock, flint rock, quartz ore; A For slag, lime rock, crushed stone and other highly abrasive materials; C For moderate abrasives such as sand, loam, soda, gravel.

Thermoid's exclusive impregnation process welds carcass and cover into an exceptionally strong, durable belt. Finest quality reinforcement and specially compounded rubber stocks assure long life . . . lower your handling costs per ton. Call your Thermoid Distributor, or write direct for Catalog #3687.



Conveyor & Elevator Belting • Transmission Belting
F.H.P. & Multiple V-Belts • Wrapped & Molded Hose

Thermoid

Rubber Sheet Packings • Molded Products
Industrial Brake Linings and Friction Materials

Thermoid Company • Offices & Factories: Trenton, N. J., Nephi, Utah

It's Your Business . . .

Highway Needs Assure Bright Construction Future

A $35-BILLION TAB is how state highway officials rate the improvements needed, just on federal-aid highways alone. They say that 63.8% of this 673,-137-mi system is in need of improvements. The other 2,750,000 mi of urban and rural highways need improvements, too, even though no dollar signs have been put on this part of the nation's highway modernization job.

Individual proposed projects that are already identified by name and location add up to $9.6 billion. This includes $2.3 billion for bridges and $7.3 billion for street and road projects that make up the measured construction backlog on record with CONSTRUCTION METHODS AND EQUIPMENT.

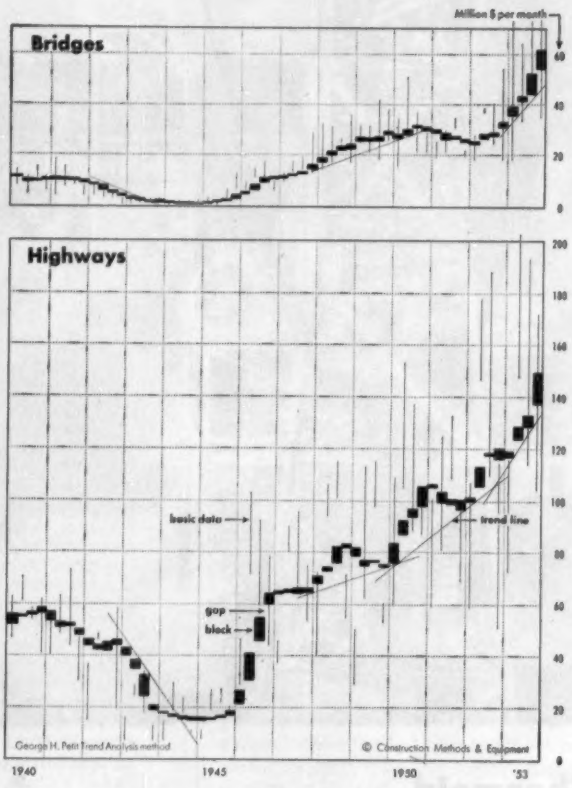
The most spectacular speed-up in this improvement program comes from the toll roads.

A round-up of these shows that the 1,081 mi now under construction will cost $1.5 billion. Another 3,056 mi are authorized to cost $3.57 billion and 1,967 more miles are proposed that would cost $2.115 billion. At least half of the latter stand a good chance of being built. This means $4.5 to $5 billion of future toll road construction now in sight. Most of these stretch from Kansas to Texas and across Northern states east of the Mississippi. But a few are disconnected sections in the south.

Contracts awarded in 1953 for highway and bridge construction broke all all-time records. They topped the previous (1952) record by 38%. The chart on this page shows how powerful the momentum is in letting highway contracts.

This is a new type of chart. The thin vertical lines show for each quarter of the year the high and low average monthly volume of contracts as let. The black blocks show the high and low value of the 12-month moving averages for each quarter. When the blocks expand and the gaps between them open up, this indicates increasing momentum in the trend. When the trend slows down, the gaps close and the blocks shrink. The trend ends when a block penetrates a trend line.

Note that the uptrend is still increasing, the gaps are open, and the blocks not only are expanding but are pulling up away from the trend line and setting new and steeper trends.



Highway and bridge contracts will continue strong uptrend

Federal Construction Budget

Few plus signs show up in the first all-Eisenhower construction budget, which asks for $5.9 billions for fiscal '55. This is down $569 millions or 9% from estimated construction expenditures for fiscal '54. Most of the drop is in civil works, with the budget down $494 million or 14% while military construction is budgeted down only $75 million or 3%. Air Force construction is allocated $1.1 billion, up 10 percent, and TVA $292 million, a 16 percent gain.

Civil works would get a little over $3 billion, and military construction almost $2.9 billion should the budget pass as presented by the chief executive.

These recommendations are based on a policy that public works spending should be held down while national income and employment remain high. But should business turn down drastically, the government wants to use public work to offset a decline in private construction.

In addition to the St. Lawrence Seaway, the President recommended the start of 22 new small and medium size water projects and the resumption of four others suspended last year.

Construction Budget Breakdown on page 28

A USER'S REPORT ON THE DW21

THE USER: A. L. Alley & Son, Faribault, Minnesota.

THE JOB: Relocation of U. S. No. 61 at Red Wing, Minn., where two Cat® DW21 Tractors with No. 21 Scrapers were working with other equipment in wet, sticky conditions on an earthmoving assignment of 300,000 cu. yds. Loading was in wet shale with favorable grade. The going on the ¾-mile haul was good to soft, with 3% adverse grade in the cut. The fill area was soft.

PRODUCTION: Working 9-hour days, the DW21s averaged 900 to 1000 pay yards a day per unit. Loading time with pusher: 1 to 1½ minutes. Running time on the haul: 2¾ minutes. Average cycle time: 8¾ minutes.

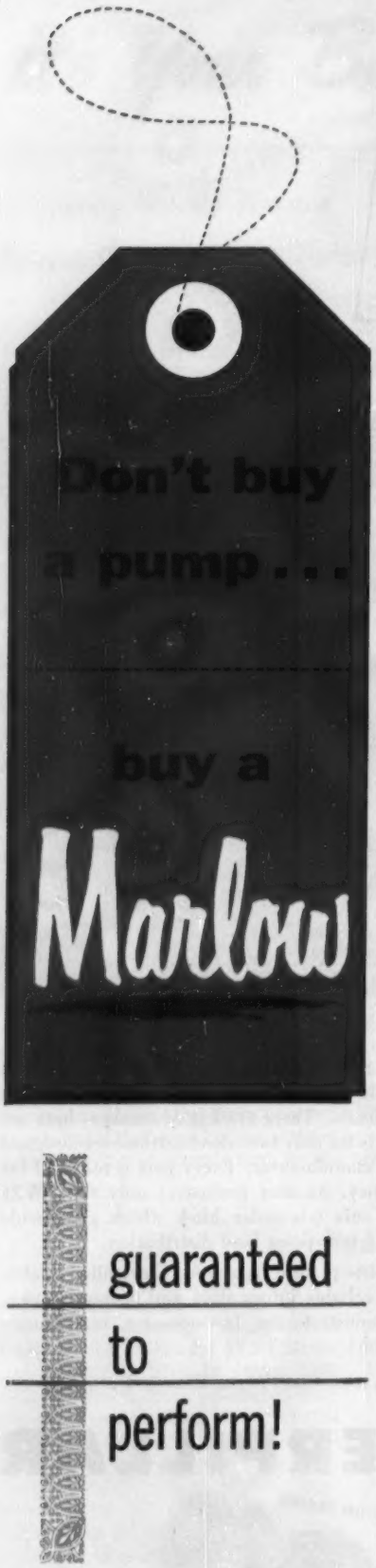
Report from the user, Superintendent L. Parker speaking: "With the performance of our DW21s to date, we would say they are the best machines of the rubber-tired class we have ever owned. Those large tires are a big advantage loading the shale, on the haul road and in the soft fill. The rigs are powerful, fast and easy to handle. Their superior performance caused us to buy three additional such machines for another job running south of Red Wing, Minnesota."

There are the facts. Like Mr. Parker, other users report you can't beat this rugged yellow earthmover for big production on long hauls. There are lots of reasons—here are a few: the DW21 is the only two-wheel earthmover designed and built by one manufacturer. Every part is matched for maximum efficiency. Another exclusive: only the DW21 has the rugged, safe triangular hitch which gives wide bearing space and four-point load distribution.

Get the complete picture from your Caterpillar Dealer. He's a source of reliable information and prompt service. Ask him to demonstrate the fast-stepping, big-capacity DW21 on your job!

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR®



IT'S YOUR BUSINESS . . . Continued from page 26

How Construction Budget Compares With Expenditures

Federal Agency	Expenditures Actual 1953	Expenditures Estimated 1954	Budget 1955	% Change 53-54	% Change 54-55
	millions—fiscal years				
Total construction expenditures	**$6,391.0**	**$6,478.9**	**$5,910.1**	**+1**	**—9**
Civil works	**$3,405.1**	**$3,520.9**	**$3,027.1**	**+3**	**—14**
Corps. Eng. — Rivers; harbors; flood control	561.4	408.1	373.1	—17	—9
Interior Dept.	313.9	269.8	258.9	—14	—6
Bu Reclamation	192.1	144.1	134.3	—25	—7
Bonneville Power Adm.	53.4	50.2	42.5	—6	—15
Other, including territories	68.4	75.5	76.1	+10	+1
TVA	212.4	250.9	291.7	+18	+16
Bu Public Roads—highways	538.1	580.0	570.5	+8	—2
CAA-airports	45.6	33.8	20.7	—26	—39
VA-hospitals	98.5	72.4	58.2	—26	—20
Health, Educ., & Welf. hosp. & schools	273.4	255.9	266.0	—6	—12
Hospital and school constr.	209.6	181.4	126.2	—13	—30
Loans for school constr.	14.1	36.9	62.1	+162	+68
Grants to private hospitals	49.7	37.6	37.7	—24	0
Agriculture Dept.	245.8	291.2	250.3	+18	—14
Forest roads, trails; flood control	14.3	49.2	25.3	+244	—49
Rural elec., tel. loans, gross	231.5	242.0	225.0	+5	—7
HHFA	954.4	1164.3	844.8	+22	—27
Public housing loans, gross	924.3	1122.6	840.9	+21	—25
Defense housing & other loans net	30.1	41.7	3.9	+39	—91
Other civil works: NACA; Depts. State, Treasury; defense production facil.	161.5	194.5	138.9	+20	—29
Military construction	**$2,986.0**	**$2,958.0**	**$2,883.0**	**—1**	**—3**
Air Force	941.0	1,012.0	1,109.0	+8	+10
Army	510.0	350.0	248.0	—31	—29
Navy	462.0	326.0	193.0	—30	—41
Proposed legislation	....	....	100.00	..	..
Atomic energy plants	1,054.0	1,257.0	1,213.0	+19	—4
Ben. Serv. Hd.-storage facil.	19.0	14.0	20.0	—26	+43

Some Big Jobs of the Month

Guy F. Atkinson Co., 10 W. Orange Ave., South San Francisco, Calif. and **Ostrander Construction Co.,** Terminal Sales Bldg., Portland, Ore. Phase 3, powerhouse construction, The Dalles Dam, Wasco Co., Oregon, for U. S. Engineers, Pittock Block, Portland 5, Ore., $18,886,007.

The Mariani Construction Co., Inc., 222 Forbes Ave., New Haven, Conn., Bridge across Housatonic River, with approaches at Southville, Brookfield and Bridgewater for the State Highway Commission, 506 State Office Bldg., Hartford, Conn., $1,153,996.

Blackfield Construction Co., 145 Natoma St., San Francisco, Calif., subdivision of 432 homes in Pacific Manor, San Mateo, Calif. for Pacific Highlands Co., 145 Natoma St., San Francisco, Calif. $4,000,000.

J. A. Tobin Construction Co., 3700 Rainbow St., Kansas City, Mo., paving and miscellaneous work on Paseo Bridge, Kansas City, for Jackson and Clay counties, c/o Jackson Co., Court House, 12th & Oak Sts., Kansas City, Mo., $1,141,000.

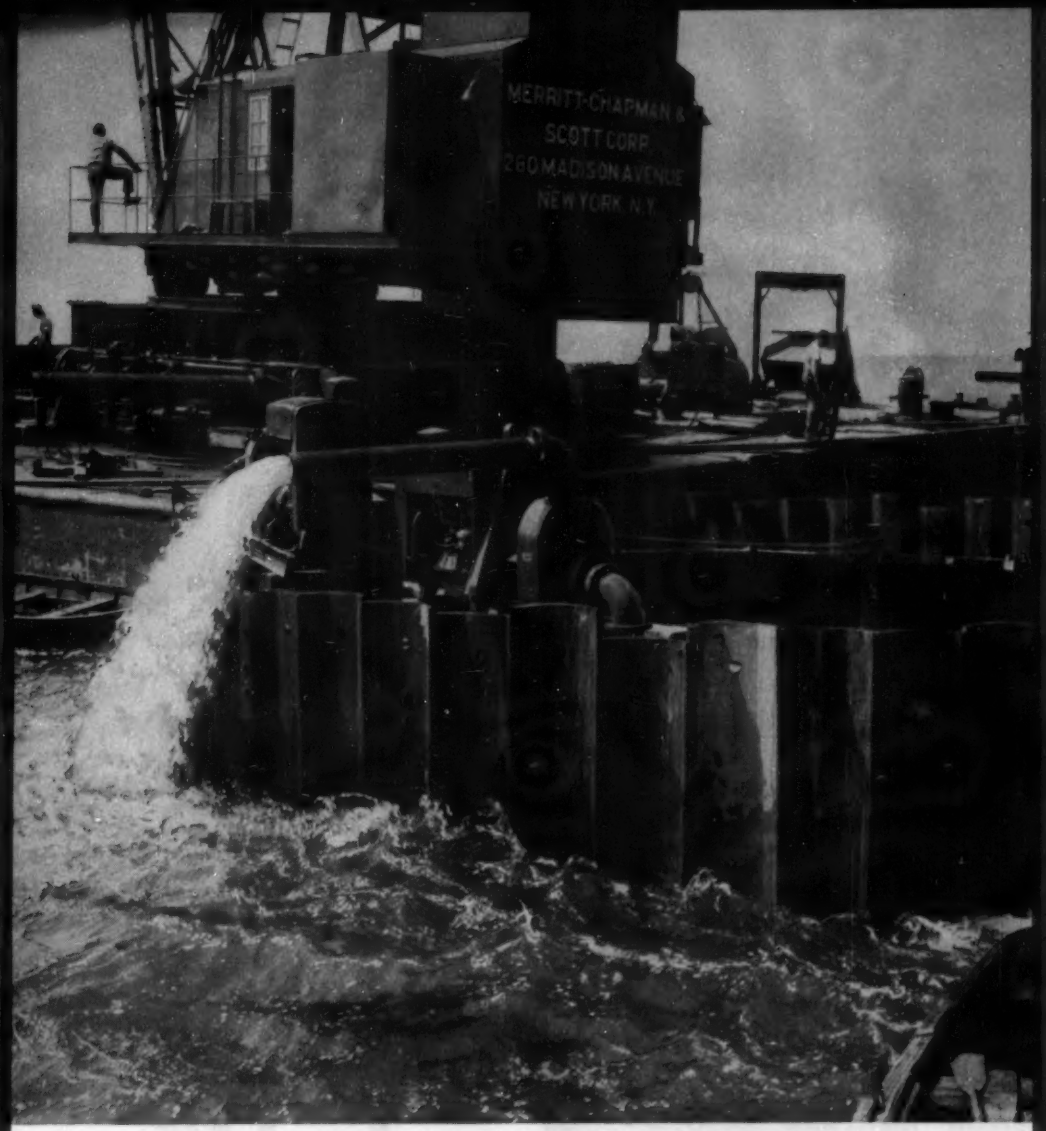
Taylor Construction Co., 2875 LeJeune Road, Miami, Fla, a hotel at Miami for the Fountainbleau Hotel Corp., 2875 N. LeJeune Road, Miami, $4,000,000.

Badgett Mine Stripping Corp., Central States Construction Co., and **Soo Constructors, Inc.,** Winona, Minn., grading, drainage, structures and paving approximately 12.5 mi of the Ohio Turnpike for the Ohio Turnpike Comm., 139 E. Gay St., Columbus, Ohio, $11,517,407.

Leon D. DeMatteis Construction Co., 827 Elmont Rd., Elmont, N. Y. Senior High School, Oceanside, N. Y., for the Board of Education, Oceanside, N. Y. $2,273,167.

Ralph M. Parsons Co., 617 Olive St., Los Angeles, Calif., design and construct large gas refining and sulfur recovery plant at Manderson, Wyo., for the General Petroleum Corp., 108 W. 2nd St., Los Angeles 12, Calif., $3,950,000.

C. H. Harrison & Fred Hall, Box 185, Waco, Tex., sewage disposal or treatment plant for the city of Waco, Tex., City Hall, Waco, $1,441,600. *(More Big Jobs on page 189)*



PIERS FOR THE THREE MILE BRIDGE over the Hudson River on the New York State Thruway between Nyack and Tarrytown created no problem for Merritt-Chapman & Scott Corporation of New York City. Of a total of 23 piers, 15 were built with cofferdams, two for each pier. Dependable, 8" AGC rated Marlow Self-Priming Centrifugal Contractor's Pumps were used on the job to dewater the cofferdams quickly and handle seepage water efficiently.

marlows are dependable!

Construction bids must be *right* to get the job and make a profit! Progressive operators use new methods and modern equipment to reduce costs. When it comes to pumping jobs, more and more contractors know they can depend on rugged, efficient Marlow Self-Priming Pumps or famous Marlow "Mud Hogs" to get the job done *on time* with little attention and low maintenance. See your Marlow dealer or write for Bulletin C-52.

MARLOW PUMPS • RIDGEWOOD, NEW JERSEY

Le Roi-CLEVELAND T-286 Self-propelled Dual Drill Rig — consists of two patented Le Roi-CLEVELAND air feeds and drills with air-motor booms mounted on a mobile 25-hp tractor. You can drive the T-286 anywhere and tow your Airmaster compressor as well. You get quicker setups, faster drilling, better fragmentation, and lower costs.

Le Roi-CLEVELAND Clay Digger — at work on a sewer job. Well-balanced for easy handling, these spaders pack plenty of wallop for the stiffest clay. Operators like them, because they can do more work with less effort. A one-piece, bonded, rubber buffer with split steel collars keeps out dirt and grit — makes steel changing faster.

Le Roi-CLEVELAND Paving Breakers—are packed with power to make quick work of breaking up the hardest concrete. Sizes range from 18 to 80 lbs. Protective cushion in front end assures long life. Exclusive valving provides an easy-holding action that operators like. All these features help you reduce your costs.

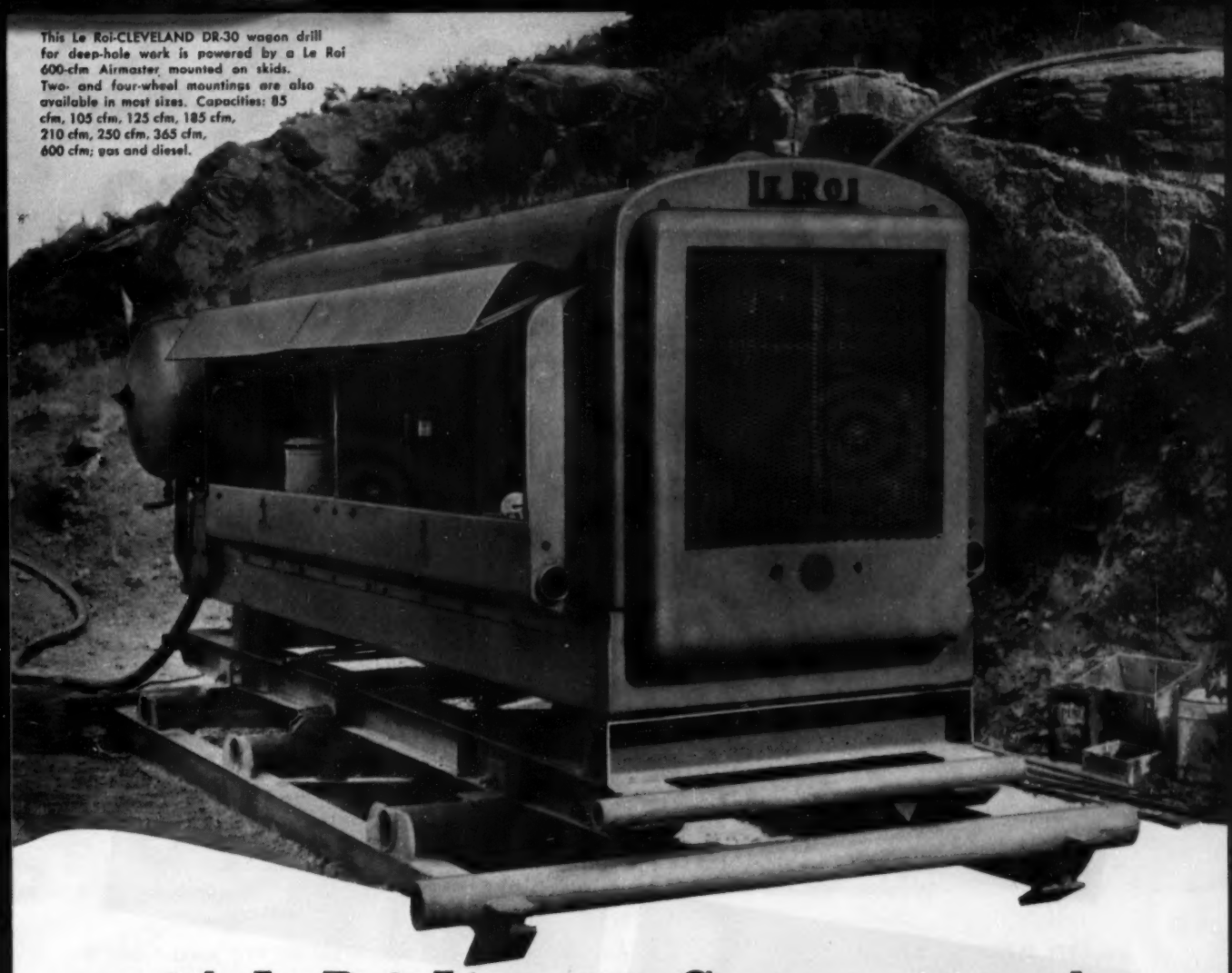
Le Roi-CLEVELAND Backfill Tamper—weighs only 34 lbs. Thanks to its smooth-holding qualities it can be "walked" over the fill easily. Operators can do more tamping. The major parts are made from durable drop-forgings and a built-in oil reservoir keeps wear to a minimum. Just another example of how Le Roi gives you more for your money.

Your air-power operations

Cost Less

LE ROI GIVES YOU MORE FOR YOUR MONEY!

More air power!
More footage!
More profits!



This Le Roi-CLEVELAND DR-30 wagon drill for deep-hole work is powered by a Le Roi 600-cfm Airmaster mounted on skids. Two- and four-wheel mountings are also available in most sizes. Capacities: 85 cfm, 105 cfm, 125 cfm, 185 cfm, 210 cfm, 250 cfm, 365 cfm, 600 cfm; gas and diesel.

...with Le Roi Airmaster Compressors and Le Roi-CLEVELAND Air Tools on the job

AIR POWER is so widely used, because it does so many things — because it saves money

And money-saving air power costs less, when you use Le Roi Airmaster Compressors. Here's why:

- Le Roi, with 8 sizes and 14 models, offers the widest range of portable-compressor sizes available. Now you can match your job requirements exactly, with an Airmaster Compressor that lets you do the most work for the least cost.
- Le Roi Airmasters are powered by a heavy-duty Le Roi engine designed especially for compressor service. Conservative engine ratings give you ample power reserve — for lower fuel consumption, less maintenance, lower operating costs. Magneto ignition gives you quick, easy starting — saves time, lets you get going faster.

For still better results, still lower costs, use Le Roi-CLEVELAND air tools with your Airmasters. They will drill more rock, dig more clay, break more pavement, tamp more fill for you.

Use this team and you will find, as so many have, that Le Roi gives you more for your money — more air power, more footage, more profits. See your Le Roi distributor or write us for further information.

Compressors
Rock Drills
Tractair
Engines

LE ROI COMPANY Milwaukee 14, Wisconsin

A Subsidiary of Westinghouse Air Brake Co.

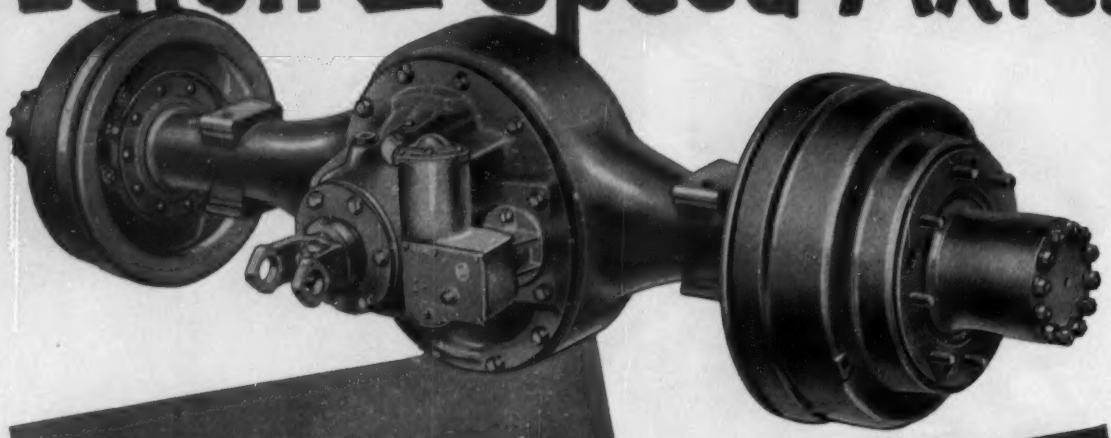
Plants: Milwaukee • Cleveland—Greenwich—Dunkirk, Ohio • Coldwater, Mich.

6-152

Nation-Wide Sales-Service Network

ALABAMA: Birmingham, Mobile — ARIZONA: Phoenix — ARKANSAS: Little Rock — CALIFORNIA: Bakersfield, Long Beach, Los Angeles, San Francisco — COLORADO: Denver, Grand Junction — CONNECTICUT: Hartford — FLORIDA: Jacksonville, Miami, Tampa — GEORGIA: Augusta, Decatur — IDAHO: Boise, Idaho Falls, Twin Falls — ILLINOIS: Chicago — INDIANA: Indianapolis — IOWA: Cedar Rapids, Des Moines, Waterloo — KANSAS: Great Bend, Kansas City, Pratt, Wichita — KENTUCKY: Lexington, Louisville — LOUISIANA: New Orleans, Shreveport — MAINE: Augusta — MARYLAND: Baltimore, Hyattsville — MASSACHUSETTS: Hyde Park, Newton Highlands, Worcester — MICHIGAN: Detroit, Grand Rapids — MINNESOTA: Duluth, Minneapolis — MISSISSIPPI: Jackson — MISSOURI: Joplin, St. Louis — MONTANA: Billings, Great Falls, Kalispell, Missoula — NEBRASKA: Omaha — NEW HAMPSHIRE: Manchester — NEW JERSEY: Cranford, Kingston — NEW MEXICO: Albuquerque — NEW YORK: Albany, Binghamton, Buffalo, Long Island City, Newburgh, Rochester, Saugerties, Syracuse, Whitesboro, Woodside (L.I.) — NORTH CAROLINA: Charlotte — OHIO: Cincinnati, Cleveland, Columbus, Dayton, Toledo — OKLAHOMA: Oklahoma City, Tulsa — OREGON: Portland — PENNSYLVANIA: Bethlehem, Harrisburg, Philadelphia, Pittsburgh — RHODE ISLAND: Providence — SOUTH CAROLINA: Columbia — SOUTH DAKOTA: Rapid City, Sioux Falls — TENNESSEE: Chattanooga, Knoxville, Memphis, Nashville — TEXAS: Dallas, El Paso, Houston, Lubbock, San Antonio — UTAH: Salt Lake City — VIRGINIA: Richmond, Roanoke — WASHINGTON: Seattle, Spokane — WEST VIRGINIA: Clarksburg, South Charleston — WISCONSIN: Milwaukee — WYOMING: Casper.

Eaton 2-Speed Axles

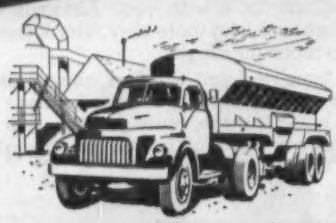


Pulling Power and Speed

Easy to Shift, Safer to Drive

Save Money for Truckers

Longer Truck Life, Better Trade-in

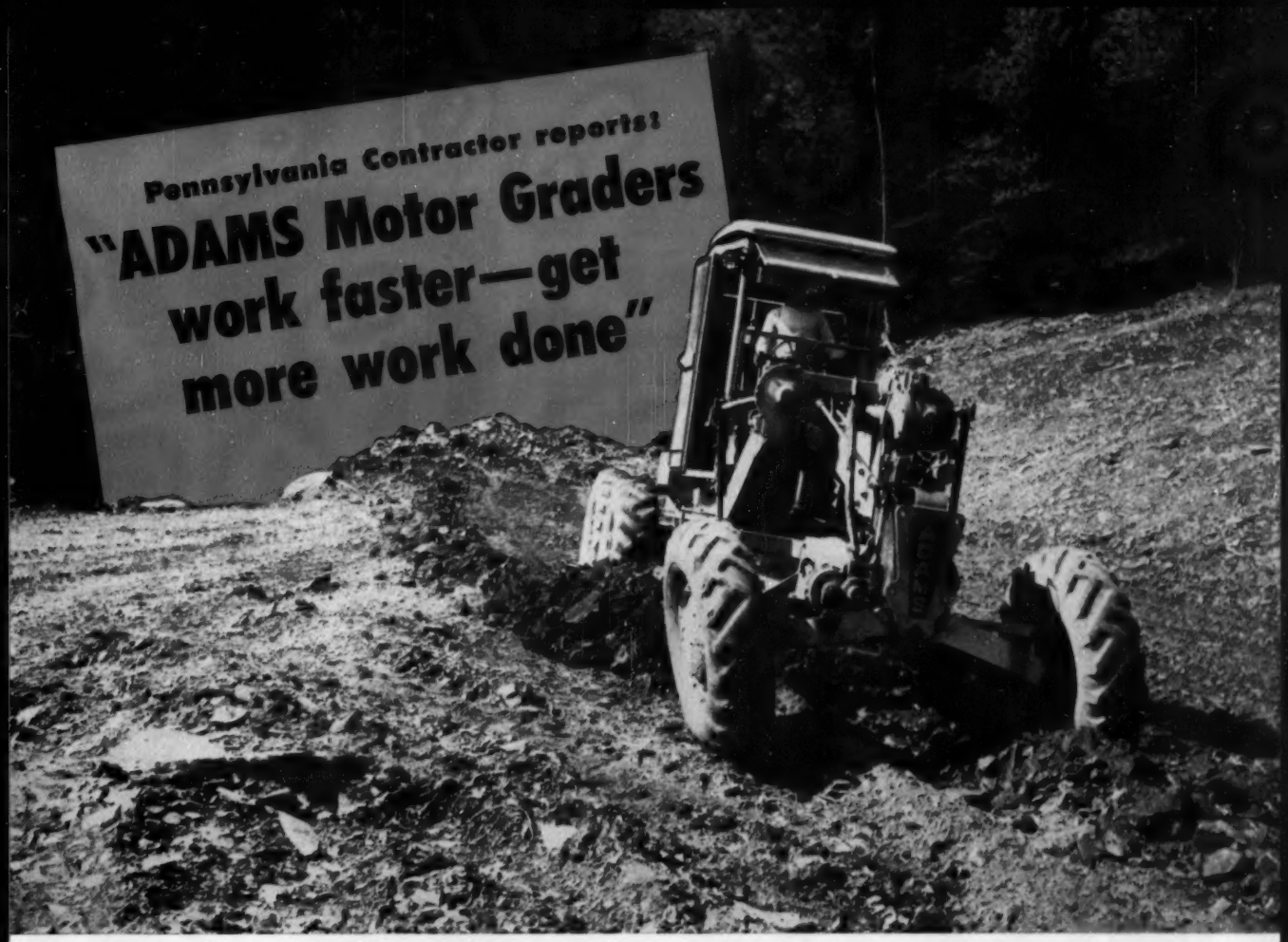


More than two million Eaton Axles in trucks today!
For complete information, see your truck dealer.

EATON

AXLE DIVISION
MANUFACTURING COMPANY
CLEVELAND, OHIO

PRODUCTS: Sodium Cooled, Poppet, and Free Valves • Tappets • Hydraulic Valve Lifters • Valve Seat Inserts • Jet Engine Parts • Rotor Pumps • Motor Truck Axles • Permanent Mold Gray Iron Castings • Heater Defroster Units • Snap Rings Springtites • Spring Washers • Cold Drawn Steel • Stampings • Leaf and Coil Springs • Dynamatic Drives, Brakes, Dynamometers



● This Adams "550" Motor Grader (100 hp.), owned by A. E. Oblock Construction Co., is relocating 7 miles of road in the rugged mountains of Pennsylvania.

Mr. Oblock will tell you that he likes his Adams "550" for many reasons—its power, fuel economy and high-speed operating advantages in both forward and reverse gears. These high-speed advantages stem directly from the new Adams Constant-Mesh Transmission, the latest and finest ever put into a motor grader. It is, in fact, the only transmission providing 8 forward speeds, up to 26 mph., and 4 reverse speeds, up to 13 mph.

You will find that Adams Motor Graders have more time- and money-saving advantages than any others on the market —bar none . . . advantages that pay off in more work per day, with less effort and greater economy. (See listing at right.)

For convincing proof of Adams superiority, ask your local dealer to demonstrate one of these high-speed, high-performing machines—on one of your own jobs. Phone him today!

J. D. ADAMS MANUFACTURING CO. • INDIANAPOLIS, IND.

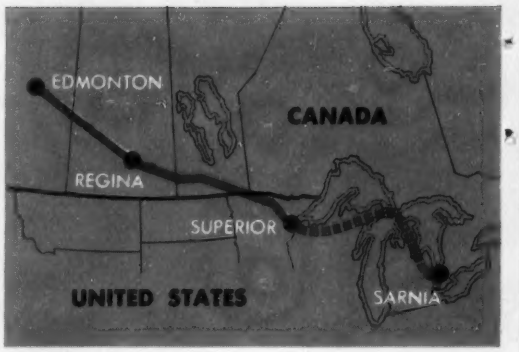
Only ADAMS Offers All These Features:

- **NEW CONSTANT-MESH TRANSMISSION**—quick, easy, positive gear shifts.
- **8 FORWARD SPEEDS**—up to 26 mph. for fast transport.
- **4 REVERSE SPEEDS**—up to 13 mph. Save time on shuttle work.
- **3 CREEPER SPEEDS**—low as ¼ mph. (Optional).
- **RUBBER-MOUNTED ENGINE**—floating power—no vibration transmitted to grader.
- **DUAL BRAKING SYSTEM**—quicker, easier, safer stops, with less effort.
- **FOOT ACCELERATOR**—for easier, safer overland travel.

ADAMS

Motor Graders TravsLoaders Pull-Type Graders

Spanning half the North American continent, Canada's Interprovincial Pipe Line and its American subsidiary, Lakehead Pipe Line, recently completed its extension from Superior, Wisc., to form the world's longest crude oil pipe line—1765 miles from Alberta's rich new oil fields to Eastern Ontario refineries.



30-inch Lakehead Pipe Line moves through upper Michigan swamplands, where welders needed platforms to keep from sinking in muck. On this 100-mile section, Midwestern Constructors used a battery of Lincoln portable welding machines, each powered by a two-cylinder GM Diesel engine.

How GM DIESEL POWER helped lay

WORLD'S LONGEST PIPE LINE

Contractors, with an early winter deadline to beat, depended upon a variety of General Motors Diesel-powered equipment to lay the Lakehead Pipe Line Extension through Michigan and across the Straits of Mackinac in record time.

Wherever you have close schedules to meet—or competitive bids to beat—you'll be money ahead with GM Diesel power, because this versatile 2-cycle Diesel gets work done faster at lower cost. Let this great GM Diesel engine prove its superior economy and dependability on *your* job!

DETROIT DIESEL ENGINE DIVISION
GENERAL MOTORS, Detroit 28, Mich.
In Canada: GENERAL MOTORS DIESEL, LTD., London, Ontario

It Pays to STANDARDIZE on

. . . available in more than 750 models of equipment built by over 150 manufacturers

GM
GENERAL MOTORS
DIESEL POWER

Straits crossing was handled by Merritt-Chapman and Scott, New York, with Midwestern Constructors, Tulsa, as subcontractors. Midwestern also laid sections of the line above the Straits and handled the St. Clair River crossing as prime contractors.

Crossing the Straits—GM Diesel-powered tugs keep Merritt-Chapman's cable-laying barge on course by running guide lines to buoys for one of the longest and deepest underwater crossings in pipe line history.

Shooting a "pig"—Tight-fitting disc, called a "pig," is shot through welded pipe to remove dirt. Air blast is delivered at steady pressure of 100 psi and better by GM Diesel-powered Ingersoll-Rand compressor supplying up to 600 cubic feet of air per minute.

Digging rock—Where going was rough, GM Diesel-powered Unit backhoes dug trench. Midwestern used these fast-moving shovels to follow blasters along route. Interchangeability of standardized GM Diesel parts in all equipment simplifies inventory, cuts costs.

Lining up pipe—GM Diesel-powered Allis-Chalmers tractors line up 2500-ft. welded pipe sections. They also moved pipe and welding machines and handled many utility jobs. Work gets done faster with smoother-running GM 2-cycle Diesels in your equipment line up.

"Eucs" on every major dam in the *Pacific Northwest!*

Albini Falls
Anderson Ranch
Bliss
Box Canyon
Cabinet Gorge
Canyon Ferry
Capilano
Chief Joseph
Dalles
Detroit
Dexter
Hungry Horse
Kenney
LaJoie
Lookout Point
Lucky Peak
Upper Malad
Lower Malad
McNary
O'Sullivan
Palisades
Ross
Upper Salmon
Lower Salmon
C. J. Strike
Tiber
Waneta
Yale

Yale Dam of Pacific Power & Light Co. in Washington built by Morrison-Knudsen Co., Inc.

Euclid equipment is just as prominent on hundreds of other earth moving jobs all over the world!

Men who plan and build the big projects know what an advantage it is to have earth moving equipment that's dependable and gets the job done faster and at lower cost. That's why you'll find "Eucs" on practically every earth moving job . . . airports, dams, roads, mine and quarry operations, and industrial work.

In the Pacific Northwest, for example, Euclids have been standard equipment on all of the large storage, irrigation, power, and flood control dams built during the past ten years. Large fleets of "Eucs". . . over 500 Bottom-Dumps, Rear-Dumps and Scrapers . . . moved tremendous tonnages.

On many of these jobs a million or more yards of heavy excavation had to be moved over steep grades and long, tough hauls. Penalty clauses made it imperative that contract deadlines be met regardless of weather and other adverse conditions. The rugged dependability of Euclid equipment has been an important factor in keeping these projects on or ahead of schedule.

When you need large capacity, high speed earth moving equipment, check with any Euclid owner. You'll find that "Euc" performance has paid off by moving more loads per hour at more profit per load . . . and it can do the same for you.

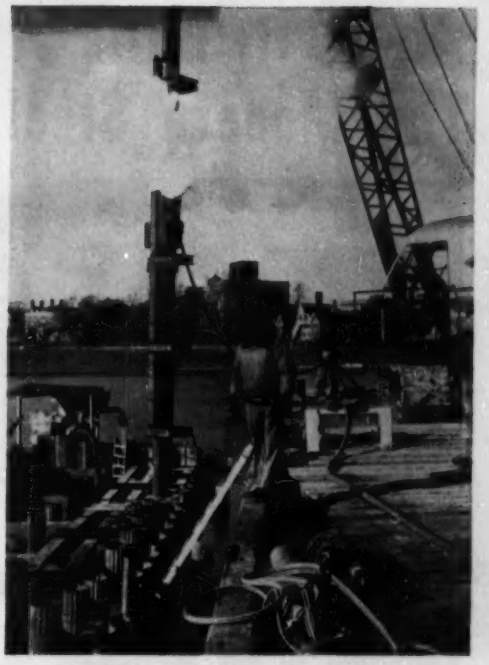
EUCLID DIVISION GENERAL MOTORS CORPORATION, **Cleveland 17, Ohio**

Euclid Equipment

FOR MOVING EARTH, ROCK, COAL AND ORE

GM GENERAL MOTORS

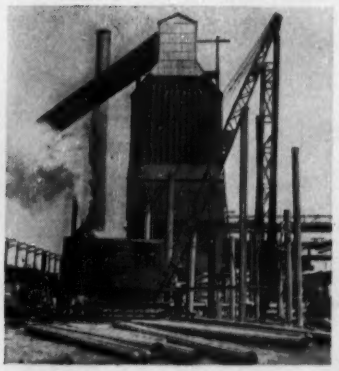
MONOTUBE PILES
for all types of structures



FOR small jobs . . . for the biggest or toughest jobs . . . you'll find Monotube fluted steel piles are more and more often the carefully considered choice for *all kinds* of foundation work.

There are good reasons for such choice—exceptional strength and high load bearing values, combined with light weight for easier handling and driving. Simplified on-the-job extendibility. Complete top-to-bottom visual inspection before concreting. Jobs go smoothly and fast! Less waste. Less time. Less cost!

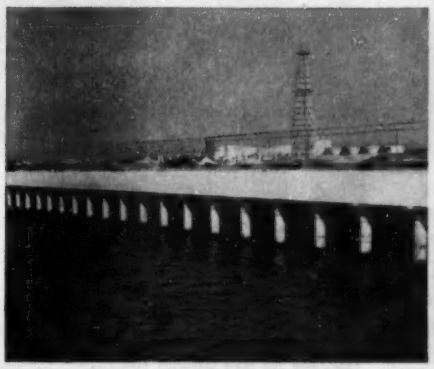
Get all the facts. Write to The Union Metal Manufacturing Co., Canton 5, Ohio, for Catalog No. 81.



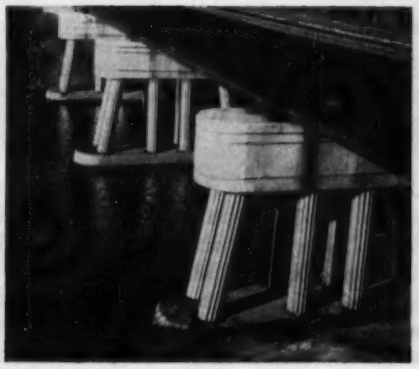
INDUSTRIAL PLANTS

BUILDINGS

BRIDGES



PIERS



RAILROAD STRUCTURES

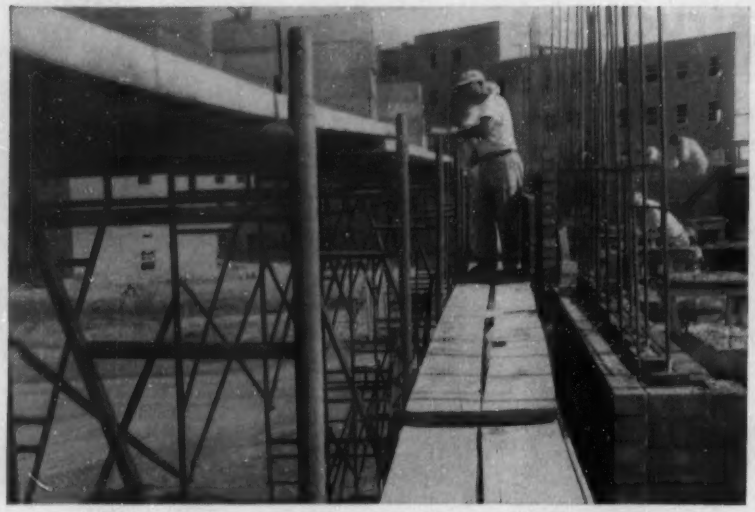
EXPRESSWAY OVERPASSES

UNION METAL

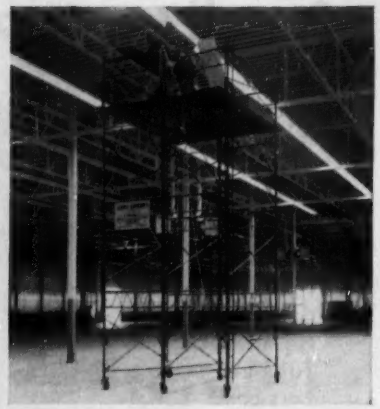
Monotube Foundation Piles for every foundation problem

(Advertisement)

Hang it, Build it Up, or Roll it to the Job; The Modern Steel Scaffold Meets All Needs



BUILT-UP FOR MASONRY WORK, this "Trouble Saver"® Sectional Steel Scaffolding speeds construction on the new Veterans Administration Hospital, Sepulveda, Calif. 3000 of the 6'6"-high, 5'-wide "Trouble Saver" frames were rented and erected by general contractor Gust K. Newburg. 20"-wide sidewall brackets support the adjustable mason platform; put men within easy reach of materials. "Trouble Saver" Scaffolding, distributed by PS Co. on a rental or sale basis, is described in free Bulletin PSS-24.



ROLLING SCAFFOLDS ARE "DOLLAR SAVERS", according to J. B. Shamel of California Electric Construction Co., who used 25 of these "Trouble Saver" Rolling Scaffolds to expedite overhead installations at North American Aviation's El Segundo plant in California. For details on dozens of time saving uses, request free Bulletin PSS-14.

HANGING SCAFFOLDS were used at the Bromley Park Housing Project, Roxbury, Mass., by general contractor M. S. Kelleher Co. 5 ft.-wide "Gold Medal"® Safety Scaffolding Machines provided a safe, unobstructed, adjustable working platform. 180 machines were used. "Gold Medal" Junior Safety Swinging Scaffolds are often used for washing down brickwork. For details on both types of Scaffolds, ask for Bulletins SS-1 and J-6.

ENCLOSING A FAMOUS EDIFICE, these erectors are installing "TubeLox"® Scaffolding for repair work on New York's famous Grace Protestant Episcopal Church. 31,612 lineal ft. of tubing and 5,828 couplers were used. "TubeLox" Scaffolding can be built-up to almost any height, conforms to any contour. Ask for free Bulletin 10-PTS.

THESE PRACTICAL EXAMPLES of PS Co. Scaffolding providing safe footing for construction workers are typical of PS service. No matter where the job is located, the *right* scaffolding is quickly available from Patent Scaffolding Co. Whether the job is simple and small or goes steeplehigh; involves uneven terrain or requires mobility, contractors can always rely on PS—the only complete line. It pays to remember—when it comes to scaffolding, come to PS.

To help you solve any scaffolding problem, PS offers a complete nation-wide engineering service—available locally. See the Yellow Pages in your 'phone book for the nearest Patent Scaffolding office or representative handling "Gold Medal" Scaffolds.

FOR GREATER SAFETY...EFFICIENCY...ECONOMY

GOLD MEDAL LADDERS SCAFFOLDING®

THE PATENT SCAFFOLDING CO., INC.

38-21 12th Street Dept. CME, Long Island City 1, N. Y.
6931 Stanford Ave., Los Angeles 1, Calif.
Branches in all principal cities

Wire Rope at Work—Some of the world's most beautiful marble comes from the eighteen quarries of the Georgia Marble Company. Through the years this firm has removed and marketed over 30,000,000 cu ft of the durable crystalline stone, which can be seen in famed buildings and memorials in every state of the Union.

The block shown in the picture, a dozen tons of particularly fine white marble, was photographed emerging from one of the company quarries near Tate, Ga. This handling job involved a lift of 175 ft, and the hoisting was done by a stiffleg derrick equipped with sound, dependable Bethlehem wire rope. Here, as always, the Bethlehem rope met every demand with plenty to spare, for it is a product made to take such loads in stride.

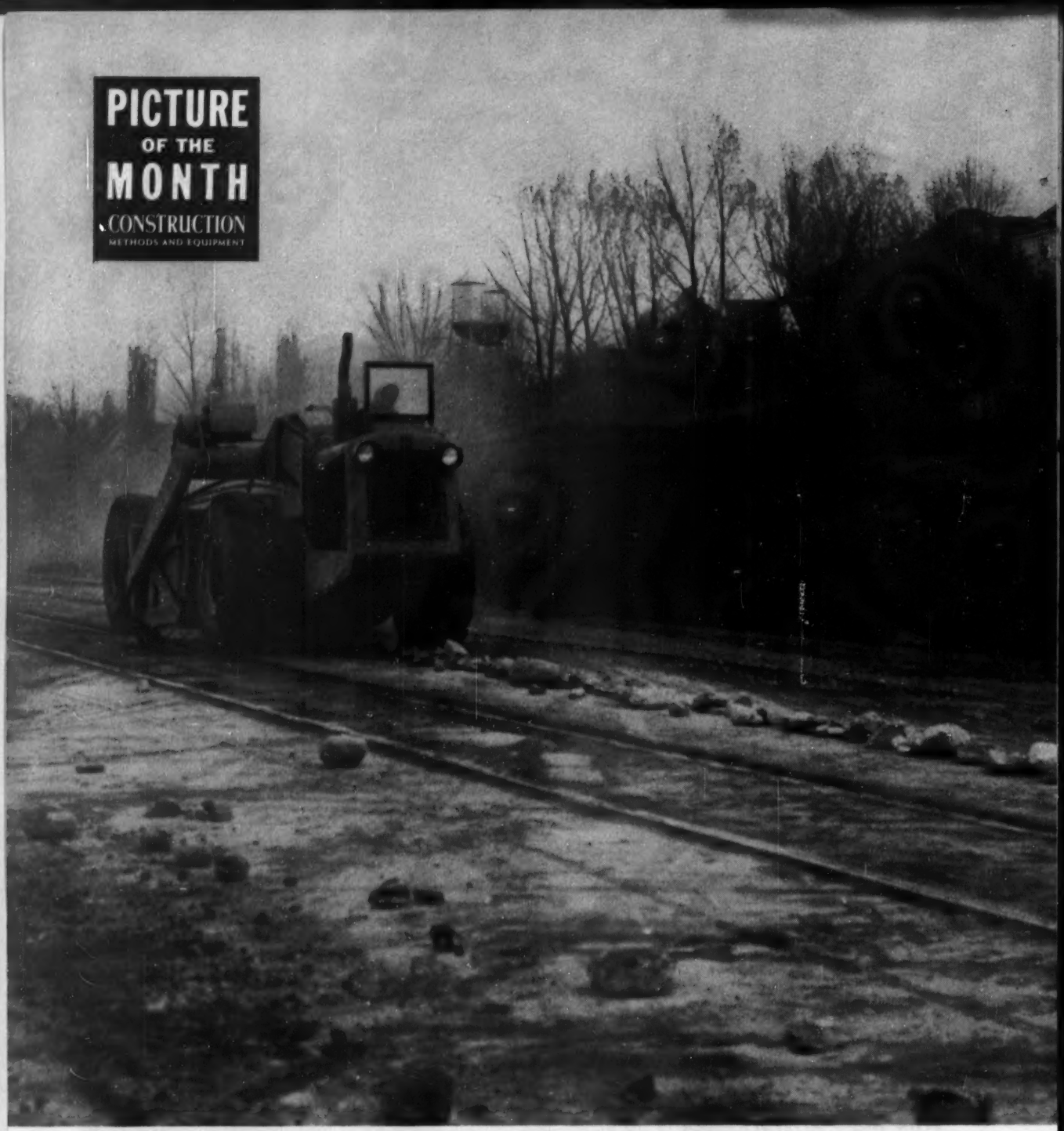
Bethlehem Steel Company, Bethlehem, Pa. On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

Mill depots and distributors from coast to coast stock Bethlehem rope for the following industries and numerous others:

MINING • CONSTRUCTION • PETROLEUM • EXCAVATING • QUARRYING • LOGGING • MANUFACTURING

PICTURE OF THE MONTH

CONSTRUCTION METHODS AND EQUIPMENT



It's Got Rocks in its Box

And a lot more rocks will be aboard that D Roadster Tournapull when it gets to the end of the windrow on this grading-paving operation. The D. W. Winkelman Co., Syracuse, N. Y., figured this method to remove scattered rock and niggerheads economically on a section of the New York Thruway following paving and shoulder grading work. First, the rocks were windrowed to the center of a completed slab with a motor grader. Then the D Roadster picked them up and hauled them away. A bit of special technique is required: The operator attains a speed of 20 to 25 mph, then lowers the blade to "float" on the roadway, scooping in stones on the run. With this speed, it is possible to load between 100 and 150 ft of windrow to a load. Rocks won't boil inside the pan so there is no gain in trying for a bigger load by pushloading.

Here the Hydrocrane excavates for a retaining wall. Boom reaches out for extra passes — without moving truck an inch! Quick-set outriggers provide outstanding machine stability . . . even permit the ⅜-yd. clamshell bucket to be handled with a flat boom, fully extended. Every crane function fully hydraulic. Travels up to 50 mph on open road. Simple hand levers — no foot brakes.

BUCYRUS ERIE

HYDROCRANE'S built-in reach grabs the "EXTRA-DOLLAR" jobs

Bucyrus-Erie Hydrocrane with hydraulically telescoping boom gives you 8 ft. more boom — right at your fingertips. This special extend-retract action means extra dollars in savings on regular jobs . . . extra dollars in profits on special jobs ordinary outfits can't handle. Look:

1. *On erection work* boom reaches between girders . . . hoists concrete buckets, planking, etc., to upper stories . . . saves hundreds of man-hours.
2. *On road work* telescoping boom reaches under branches, over obstructions while handling pipe, culvert, or levelling shoulders . . . moves material into tunnels and low underpasses . . . handles dozens of close-quarter jobs.
3. *On yard work* reaches into boxcars . . . over fences . . . between stockpiles to move material, load trucks, etc., in a hurry.

QUICK CONVERTIBILITY TO *HYDROHOE*

By actual stop watch test, crane has been converted to drag-shovel front end by one man in *less than one hour!* And on trenching, telescoping action of Hydrohoe boom cuts lost time moving up as much as 40 percent.

Get the full story on the all-hydraulic Hydrocrane with its many attachments.
SEND COUPON TODAY

Here the Hydrohoe starts a trench cut. Available with either 12- or 18-inch dipper—equipped with hydraulic ejector that kicks dirt out.

BUCYRUS-ERIE COMPANY
SOUTH MILWAUKEE, WISCONSIN

BUCYRUS-ERIE COMPANY
South Milwaukee, Wisconsin

Gentlemen: ☐ Please send me Hydrocrane literature.
☐ Please send me Hydrohoe literature.

Name.....

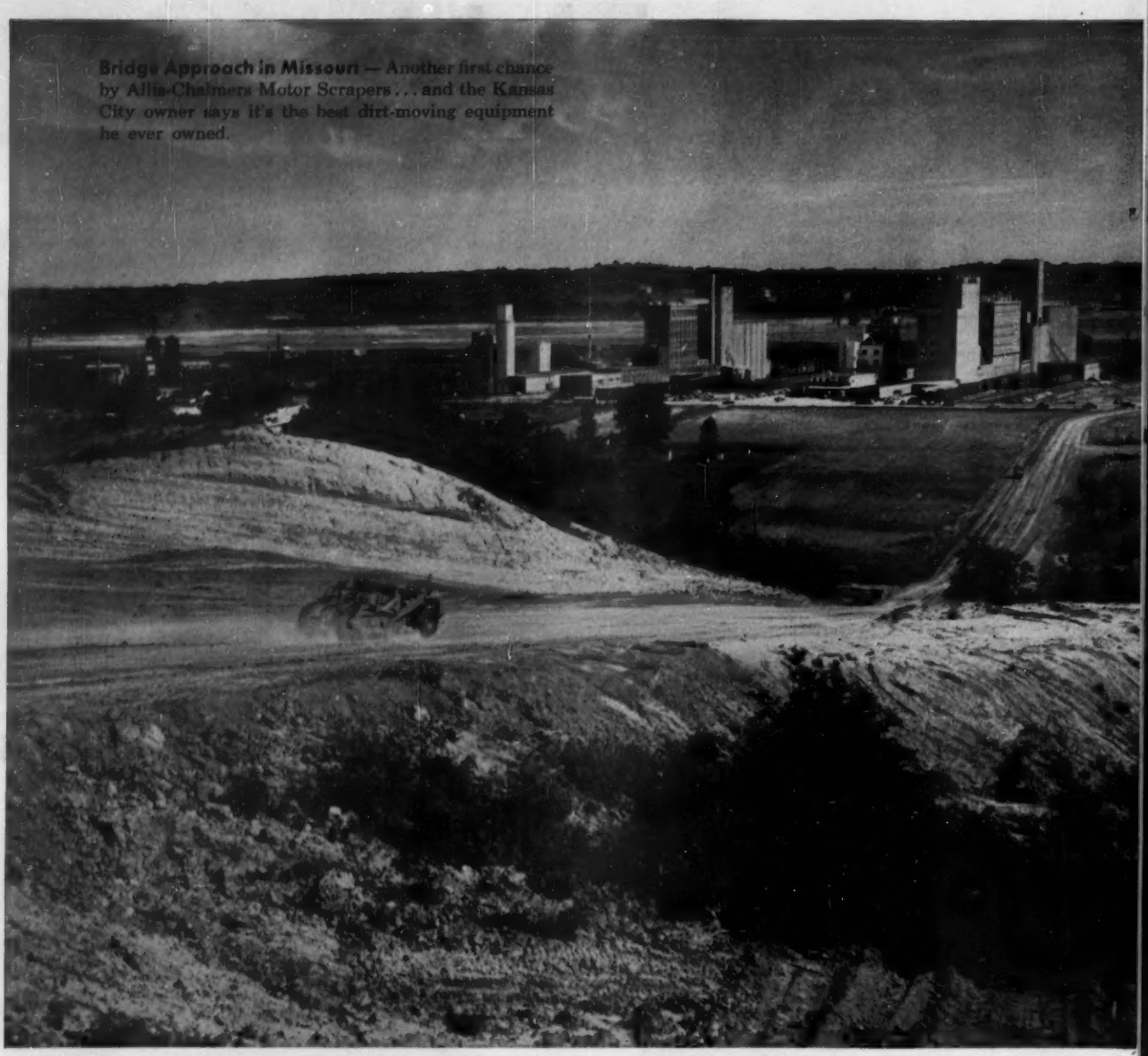
Company.....

Address.....

City..... State.....

3H53

(Advertisement)



Bridge Approach in Missouri — Another first chance by Allis-Chalmers Motor Scrapers . . . and the Kansas City owner says it's the best dirt-moving equipment he ever owned.

Today's Contractors are Keen Judges of Equipment

On earth-moving jobs all over the country, design, performance and service features that were once taken for granted are now getting a careful look . . . because even one extra yard per load, one extra mph. on the haul road can make a big difference when it comes to staying within bidding estimates.

That's why you see Allis-Chalmers Motor Scrapers and Motor Wagons on more and more big construction projects like those illustrated here. Cost-conscious, profit-conscious contractors have analyzed them, used them and have satisfied themselves that Allis-Chalmers Motor Scrapers have what they need to help them win bids, stay on schedule and make a profit when they are through with the job.

If you have your sights set on some close-margin, hard-to-get business, we *know* it will pay you to go over *all* the facts with your nearby Allis-Chalmers dealer.

Housing Project in California — Here, six big TS-300's and their HD-20 partners team up at the Westlake job near San Francisco . . . for a contractor moving over 8,000,000 yards in the last five years.

Runway Extension in Tennessee — This TS-300 is the first Allis-Chalmers equipment this contractor has ever owned, but it earned a regular spot fast by high-balling capacity loads like this trip after trip.

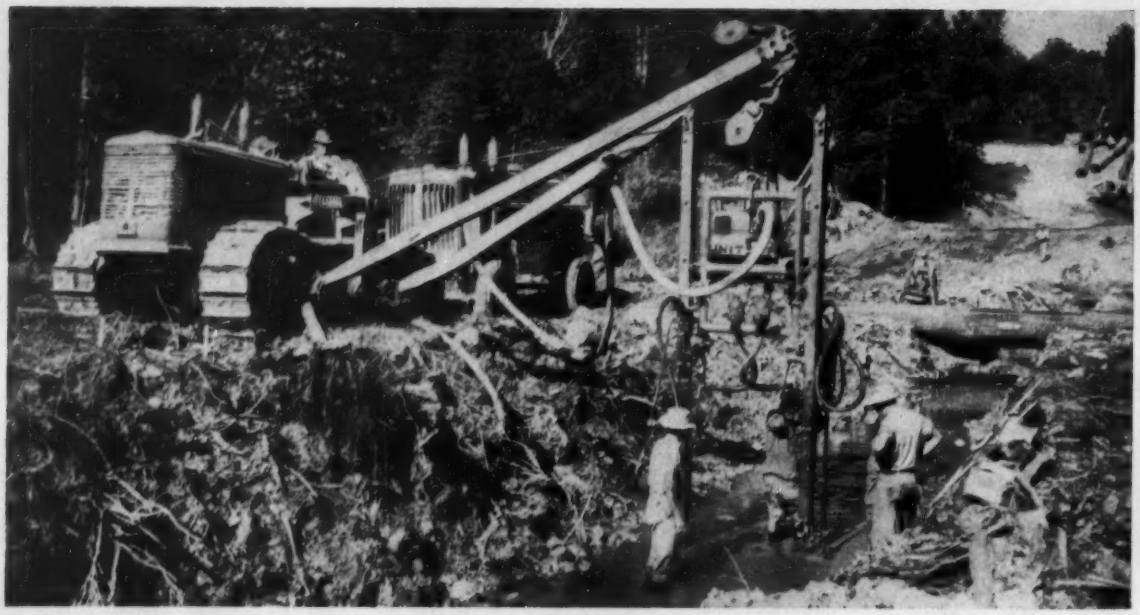
Dam-Building in Illinois — and the fleet color is Persian Orange. The 176 hp. TS-200's and HD-20's load smoothly, efficiently . . . and the TS-200 is rolling fast toward the fill the instant they break contact.

Railroad Bed in Montana — These TS-300's (14-yd. struck capacity; 18-yd. heaped capacity) averaged 14 trips an hour, excavating grade for a five-track rail bed at the site of a new aluminum plant.

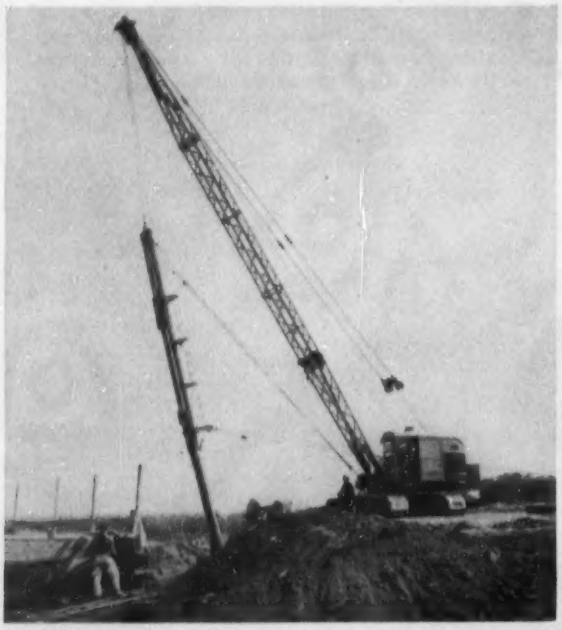
Jet Base in Jersey — Silt and sand make this a tough job . . . but the extra power of the TS-300's, plus the HD-20's ability to exert full power at creep speeds, paid off in big yardage.

ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

Construction News in Pictures...



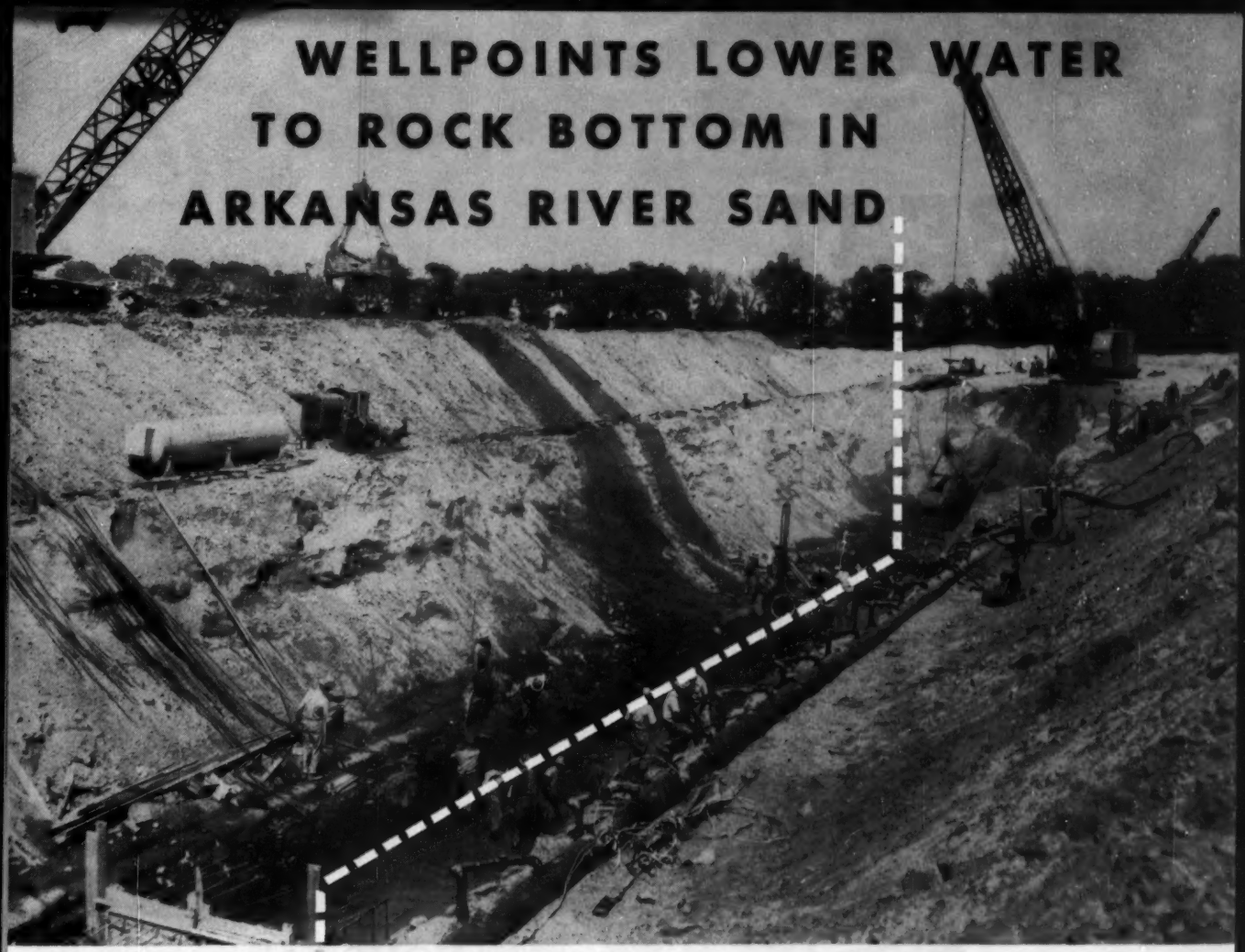
ROCKS BELOW—The network of pipelines includes many smaller distribution lines that tie into the better-known "big inch" mains. These often have to be laid through rough country where soil conditions vary all over the lot. Here, rock and water combine to make it a tough project. The trench has been excavated to rock and now the drills take over. Twin Worthington wagon-drill-type units are slung from the sideboom of an International TD-18A crawler. The tractor also tows a Worthington Blue Brute 600 compressor, powered by a 180-hp International UD-24 diesel engine, to supply the compressed air for the drills. The Unit backhoe appearing in the background cleans out the ditch, following drilling and blasting operations.—International Harvester photo



ON THE BATTER—Central States Bridge Co. of Lincoln, Neb., has a highway bridge job over Keg Creek near Treynor, Iowa, that involves the driving of long piles. The contractor uses a Lorain crawler crane (Model 50-K) equipped with a 60-ft boom to drive 14-in., 50-ft long piles at a 70-deg angle. A 3,400-lb drop hammer is operated by the crane to drive the big timbers 48 ft deep into the cornbelt ground along an embankment to support an abutment. —Thew-Lorain photo

TURNING THE WHEEL—Lima crane on crawlers picks up and carefully positions a big tunnel liner section adjacent to the site of construction going on for Palisades Dam near Boise, Idaho. The big liners are 26 ft in dia and are fabricated by electric welding. The big and awkward pieces have to be repositioned as fabrication proceeds, and the 60-ft boom on the Lima is just the ticket for the contractor, American Pipe & Construction Co., Portland, Ore.—Caterpillar Tractor photo *(Continued on page 48)*

WELLPOINTS LOWER WATER TO ROCK BOTTOM IN ARKANSAS RIVER SAND



PROJECT: Construction of two concrete conduits, 36" wide, 1900' long, under the Arkansas River, to serve Tulsa, Oklahoma's new sewage disposal plant.

The BIG PROBLEM on this deep excavation was WATER—14' of it in sand and gravel overlying shale rock.

It was SIMPLY SOLVED by installing a Moretrench Wellpoint System which pulled the water down to shale with these immediate results:

Excavation was handled quickly—in the dry.

Rapid job progress, essential during low river stage, was assured.

Sheeting was completely eliminated. Banks sloped.

Time and money were saved.

Need help on your wet job? Call us! We'll be glad to talk it over.

MORETRENCH CORPORATION

90 West St.
New York 6

4900 S. Austin Ave.
Chicago 38, Illinois

7701 Interbay Blvd.
Tampa 9, Florida

315 W. 25th St.
Houston 8, Texas

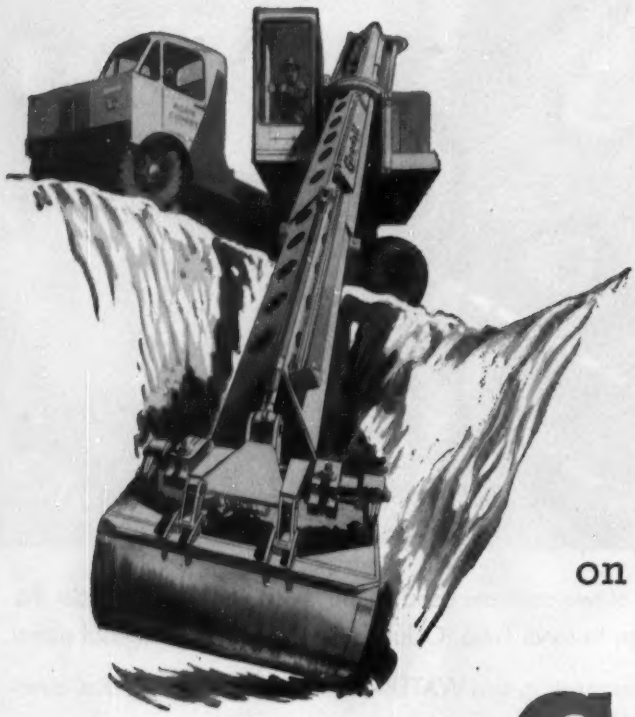
Rockaway
New Jersey

Western Representative: Andrews Machinery of Washington, Inc., Seattle 4, Washington

Canadian Representative: Geo. W. CROTHERS Limited, Toronto, Ontario

BEAT

the engineers' estimates...



on YOUR bids.

Gradall

DIVISION OF WARNER & SWASEY Cleveland PRECISION MACHINERY SINCE 1880

GRADALL DISTRIBUTORS IN OVER 75 PRINCIPAL CITIES
IN THE UNITED STATES AND CANADA

GRADALL CUTS JOB-TIME...CUTS COSTS...ON ALL THESE JOBS... Excavating
Trenching • Backfilling • Ditching • Ditch Cleaning • Grading • Loading • Sloping
Pavement Removal • Stock Piling • Hand Finishing and Clean-up • Road Widening
Placing Tile, Culverts, Curbs, Tanks • Tree Removal • Snow Removal • Maintenance Work

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

(Advertisement)

Jaeger 365 has the "plus" air needed

Drilling 24" wick holes in blue muck

To drain and stabilize river bottom blue muck bordering Highway 51, the Leon B. Stilley Construction Co., of Marion, Ill., used a 24" auger to drill wick holes 25' deep, spaced 25' apart. (This was only the second time that sand wicks have been used in Illinois.)

To pull this auger in the sticky muck required a 15 hp air motor using 330 cfm of air @ 100 psi — too big a job for any "old standard" 315 compressor, but a natural for a Jaeger 365.

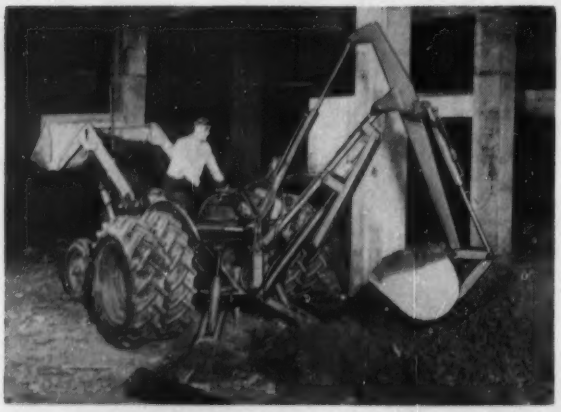
Jaeger, and Jaeger alone, is completely engineered throughout all ratings — 600, 365, 250, 185, 125 and 75 cfm — to match the air demands of modern tools. For example: Jaeger-engineered valves are 75% to 100% larger for free air flow and up to 10 times longer valve life. Valve seats and discs are machined on both faces simultaneously to parallel planes within 7/1,000,000 of absolute flatness. This exclusive method eliminates the distortions which "spring back" into valve discs under ordinary face grinding. You get positive leak-proof closure.

Ask your Jaeger distributor to show you the "plus" features of a Jaeger — its pressure lubricated, W-type compressor unit, its larger intercooler, air receiver, clutch and engine. They enable a Jaeger to deliver 15% to 25% more air than others at the lowest known cost per cubic foot. For full details, ask for Catalog JC-1.

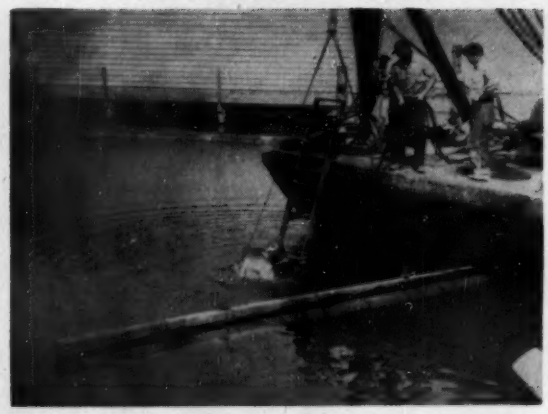
THE JAEGER MACHINE COMPANY

800 Dublin Avenue, Columbus 16, Ohio

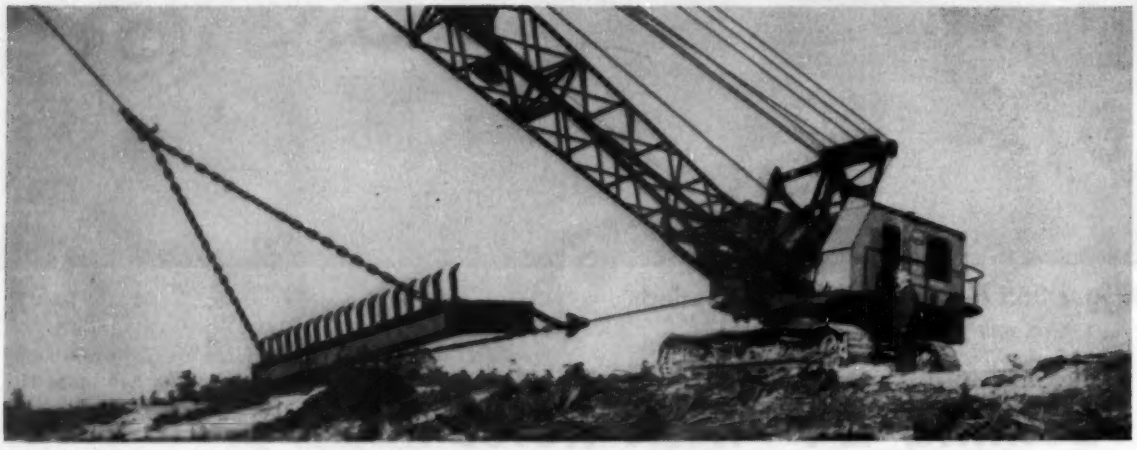
TRACTOR LOADERS • PUMPS • CONCRETE MIXERS • TRUCK MIXERS • PAVING MACHINES



CELLAR DIGGER— General Contractor O. W. Burke Co., Detroit, wanted to get Oakland Hospital in Royal Oak, Mich., under roof before cold weather. Hence, basement work was deferred. Later, Robert Patton had his Sherman Digger lowered through an areaway, excavated for 1,500 ft of sewer and electrical conduit.



FIVE AT A TIME— The McCray Marine Construction Co. placed a 500-ft underwater sewer outlet in Seattle—some sections as deep as 40 ft under water. Concrete pipe used came in 4-ft lengths. Five lengths were joined, strapped to 20-ft timbers with steel bands and lowered in units for joining by a diver.



ROOT RAKE— Job-built steel rake pulls roots and rough-grades a slope for S. J. Groves & Sons, Inc., along the Garden State parkway in New Jersey. Designed by E. J. Oak, the rake's backbone is an 18-ft length of a 12-in. wide-flange steel beam with scarifying teeth welded to it. It is handled by a Northwest 80-D dragline with a 70-ft boom.

ELECTRIC OPERATIONS— Here is a Bucyrus-Erie 120B electric 5-yd shovel getting power from a mobile Caterpillar D397 electric set. The combination is working on a 9-mi New York Thruway contract held by George M. Brewster & Son, Inc., Bogota, N. J. The experiment worked so well that Brewster put a similar setup to work at the opposite end of the project.

New Chevrolet Trucks for '54

Loaded with brand-new advantages you need and want!

You'll get more work done in less time and at lower cost with new '54 Chevrolet trucks on the job. They bring you more new features . . . more big new advantages than any other truck on the road.

For example, you get new engine power in all models. The advanced "Thriftmaster 235" engine combines bigger displacement and higher compression with other new features to give you greater power and finer performance. The rugged "Loadmaster 235" engine offers increased strength and stamina for heavier trucking operations. The all-new "Jobmaster 261" engine* brings you extra reserves of high-compression power for hauling big loads on schedule.

In addition, you enjoy new and even greater operating economy. All three 1954 Chevrolet truck engines bring you the full benefit of thrifty high-compression power.

And there are many, many more new things you'll like about these great new Chevrolet trucks. New, roomier pickup and stake bodies let you haul more . . . save you time and extra trips. And they're set lower to the ground for easier loading and unloading. New truck Hydra-Matic transmission* lets you drive all day without shifting. It's offered not only on ½- and ¾-ton Chevrolet trucks, but on 1-ton models, too. New Comfortmaster cab with one-piece curved windshield and amazing new Ride Control Seat* offers the last word in comfort, convenience and safety.

Plan now to see your Chevrolet dealer and get all the facts about the new Chevrolet trucks for '54. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

Most trustworthy trucks on any job!

CHEVROLET

ADVANCE-DESIGN TRUCKS

CHEVROLET ADVANCE-DESIGN TRUCK FEATURES

THREE GREAT ENGINES—The new "Jobmaster 261" engine* for extra heavy hauling. The "Thriftmaster 235" or "Loadmaster 235" for light-, medium- and heavy-duty hauling. **NEW TRUCK HYDRA-MATIC TRANSMISSION***—offered on ½-, ¾- and 1-ton models. Heavy-Duty **SYNCHRO-MESH TRANSMISSION**—for fast, smooth shifting. **DIAPHRAGM SPRING CLUTCH**—improved-action engagement. **HYPOID REAR AXLE**—for longer life on all models. **TORQUE-ACTION BRAKES**—on all wheels on light- and medium-duty models. **TWIN-ACTION REAR WHEEL BRAKES**—on heavy-duty models. **DUAL-SHOE PARKING BRAKE**—greater holding ability on heavy-duty models. **NEW RIDE CONTROL SEAT*** eliminates backrubbing. **NEW, LARGER UNIT-DESIGNED PICKUP AND PLATFORM STAKE BODIES**—give increased load space. **COMFORTMASTER CAB**—offers greater comfort, convenience and safety. **PANORAMIC WINDSHIELD**—for increased driver vision. **WIDE-BASE WHEELS**—for increased tire mileage. **BALL-GEAR STEERING**—easier, safer handling. **ADVANCE-DESIGN STYLING**—rugged, handsome appearance.

**Optional at extra cost. Ride Control Seat is available on all cab models, "Jobmaster 261" engine on 2-ton models; truck Hydra-Matic transmission on ½-, ¾- and 1-ton models.*

MORE CHEVROLET TRUCKS IN USE THAN ANY OTHER MAKE!

We give truck axles a brutal

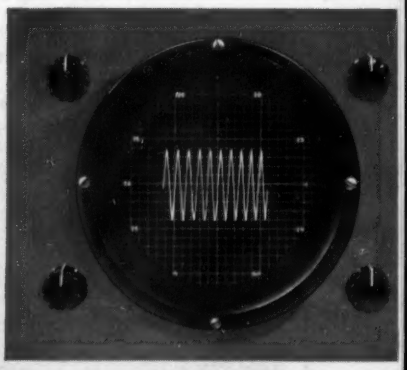
in the new Timken-Detroit indoor proving ground . . . and only

We torture them . . . shock-load, over-speed and jerk them . . . twist, strain and abuse them. We match every on-the-job hauling condition . . . then throw in a few devilish tricks of our own!

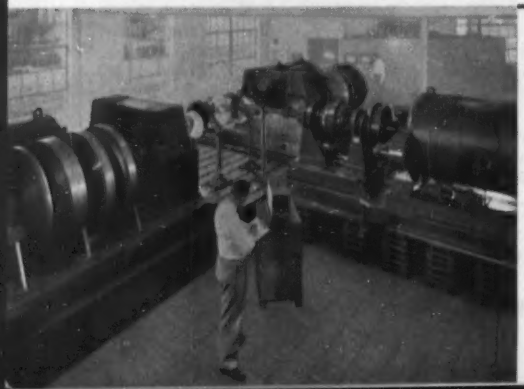
The result? You know for sure that *any* Timken-Detroit axle can take more abuse on the job it was built for than any other axle made!

To prove it, we moved a huge proving ground indoors. In one room we can simulate any hauling situation—our engineers can apply 50 years of experience to perfecting axles for modern trucks, buses and trailers, and measure performance with scientific precision.

This research pays off in longer truck life; less maintenance, repairs and downtime; lower operating costs. No wonder Timken-Detroit axles with Hypoid gearing rate "first" with wise truck owners!

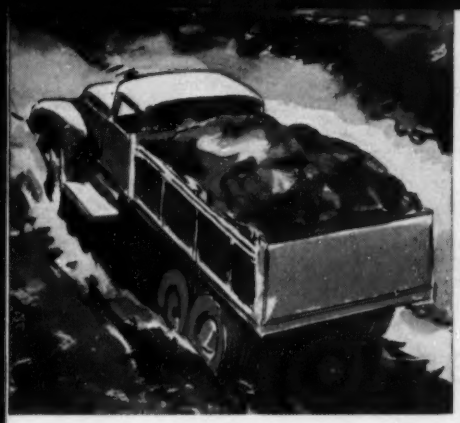


Whatever you haul . . . simulated service conditions show up electronically on a screen like this. For instance—a heavily loaded truck on a bumpy, twisting road—then on a level express highway or long grade. What happens to the axle and gearing is measured, charted with absolute scientific accuracy.



TDA controls quality in this "Torture Chamber"

Here we simulate actual highway conditions . . . test quality and performance of axles under any hauling situation, such as duplicating the kinetic energy of 80,000 lbs., G.C.W., at 60 m.p.h. All tests are repeated hour after hour with an automatic cycling control.



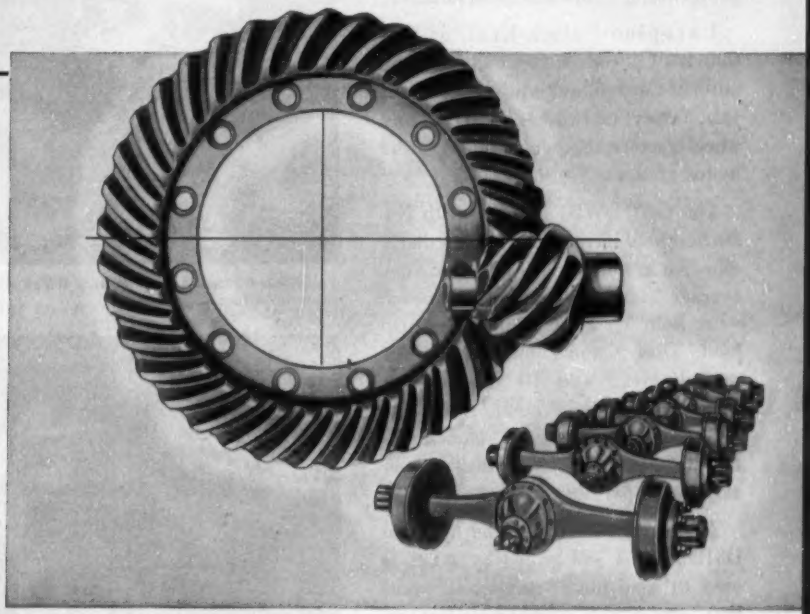
You're hauling gravel . . . you want truck axles with pulling power to get you out of the hole with a capacity load. You want steady, even power for long grades . . . speed on level road. You want all this at lowest r.p.m. *plus* easy, low-cost maintenance, economy of operation and little downtime. Timken-Detroit "Torture-Tested" axles are for you!

You're hauling wet concrete . . . you can't afford axles that "conk out" en-route. You want axles you know *for sure* will take off and get the mix to the job—*on time*—ready to pour. You don't want costly maintenance and repairs or shop-time. You want rugged Timken-Detroit "Torture-Tested" axles with Hypoid gearing. They save you money.

You're hauling dirt . . . you want axles that can get the load up and out of anywhere . . . then speed it to the dumping area and get back quick. You don't want to beat your engine to death . . . or have profit-eating maintenance, repairs or downtime. You want axles that can stand up—Timken-Detroit "Torture-Tested" axles with Hypoid gearing.

beating

Timken has it!



TIMKEN *Detroit* **AXLES**

TIMKEN-DETROIT AXLE DIVISION
ROCKWELL SPRING AND AXLE COMPANY
DETROIT 32, MICHIGAN

The Accepted D A Standard

TRADE MARK REGISTERED

"TORTURE-TESTED"
to Save Money on the Job

WORLD'S LARGEST MANUFACTURERS OF AXLES FOR TRUCKS, BUSES AND TRAILERS

Next truck you buy . . .
insist on Timken-Detroit Hypoid gearing

Hypoid gearing for truck axles was pioneered by Timken-Detroit.

Proved in billions of ton-miles of actual operation. Designed to give the slower gear ratios necessary for modern engines without loss of strength. Pinion is bigger, stronger . . . bearings are larger . . . more teeth in contact reducing loading per unit of contact area. Torque transmitting capacity increased to step up performance and rugged power.

Get interchangeability, too!

Only Timken-Detroit has Hypoid gearing in a complete "family" of 7 basic axle capacities—in the entire range of medium and heavy-duty requirements. This advanced-related design incorporates the same features of construction and interchangeability in single-speed; single-speed double-reduction; and two-speed double-reduction final drive units.

Plants at: Detroit, Michigan
Oshkosh, Wisconsin • Utica, New York • Ashtabula, Kenton and Newark, Ohio • New Castle, Pennsylvania

CATERPILLAR

Fast Moving Spread on the Los Angeles River Freeway

Engineers and contractors who have watched the progress of the new Los Angeles Freeway, between Long Beach and Santa Ana Freeway, have seen plenty of big yellow machines in action.

Ukropino-Polich-Kral, of San Gabriel, California, has had up to 50 units of Caterpillar* equipment on the job. They include track-type and wheel tractors, scrapers, bulldozers and motor graders.

The Cat* DW20 Tractors with No. 20 Scrapers have proved particularly effective in moving big yardage. They average 8 loads—20 heaped yards each—per hour on a 1.08-mile round-trip haul. This includes one minute for push-loading and 10 seconds for spreading. Over a good, level haul road the owners report clocking a DW20 pulling a fully loaded scraper at 30 miles per hour.

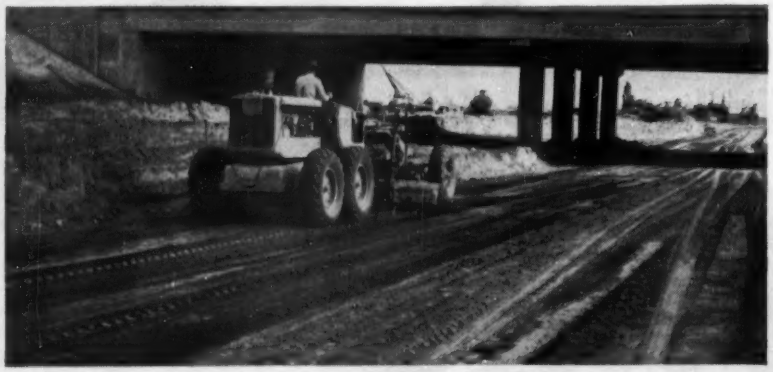
A Sierra Loader, powered by a Cat D318 Engine and pulled by a D8, is used to load huge truck-trailer units that carry 30 tons. And a 55-ton tamper, with a D8 as tractive power, compacts the earth fill.

The contractors say: "We have tried other kinds of equipment but we find Caterpillar-built machines are the most dependable. They're built to get the work done."

Many other owners agree with that opinion. Any product manufactured by Caterpillar is built with engineering integrity and honest materials—built to last a long time. It stays on the job when other machines are down.

Your Caterpillar Dealer can show you work records of equipment that has been producing profitably for thousands of hours without overhaul or repair. And he'll demonstrate the machine you need, *on your job*, any day you name.

Push-loaded by a D8 Tractor, this DW20 with No. 20 Scraper, owned by Ukropino-Polich-Kral, is ready for a fast haul to the fill.



One of the Caterpillar No. 12 Motor Graders used for maintaining haul roads on the Los Angeles River Freeway project.

A Cat D8 Tractor pulls this huge 55-ton tamper to compact earth after it has been spread on the fill by the scrapers.

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS, U. S. A.

*Both Cat and Caterpillar are registered trademarks—®

(Advertisement)

February 1954 • Volume 36 • Number 2

HAROLD W. RICHARDSON, Editor

CONSTRUCTION METHODS AND EQUIPMENT

Phe-e-www!!!

NOT ALL OF THE BAD ODOR wafting around some of the recent construction equipment auction sales comes from engine exhaust pipes. Deals between seller and auctioneer and other shenanigans, sucker bait advertising and hocus-pocus carnival pitching can produce fumes just as acrid as those arising from faulty combustion—and far more obnoxious.

Equipment auction sales—when conducted above board and on the level—are an important part of our heavy machinery economy, especially in these days of a somewhat sluggish market. They help to establish the going value of used equipment. They enable a distributor or group of dealers to unload a cluttered or heavy inventory in fast time. They clear the distributors' sales activities for concentration on new equipment. They enable the buyer to snap up an occasional bargain in machinery. All in all, sound auction sales give a sagging used equipment industry a shot in the arm.

Such a sale was conducted by Alban Tractor Co. Inc. at Baltimore last fall and reported in our October issue. That sale was held on the lot where the equipment was on display. Every item offered was demonstrated prior to the sale, and again during bidding if a request was made. Catalog descriptions were accurate, or were corrected prior to start of bidding in case an error had been made. Every piece of machinery on the lot was actually sold to the highest bidder, and the buyer was identified by the auctioneer. No minimum prices could be set by the seller in advance, and no representative of owner or auctioneer was allowed to bid. In short, it was an honest sale conducted by honest people doing an honest business. That kind of a sale is good for the construction machinery business.

Unfortunately, all equipment auction sales are not so well conducted. We're reporting one in this issue, held for some of New England distributors in Boston in December. Mind you, we're not saying or intimating there was anything unlawful or illegal about this sale. But the whole procedure did leave a bad smell, and certain actions smacked of unethical, if not illegal, business practice. At one time a disgruntled bidder called in the police to stop the sale temporarily, an indication that at least some pepople present were suspicious.

Equipment was on display miles away from point of actual sale, a Boston hotel ballroom. According to some complaints we heard, descriptions and serial numbers listed in the catalog were inaccurate in several instances. Bidders were furnished numbered paddles, and many a gripe was heard about fast paddle manipulation. No out-of-the-know bidder knew who was bidding against him, if any one. No one could tell if an item was knocked down to a legitimate bidder or to a fictitious paddle number to protect a pre-determined minimum sales price.

No one could tell what items were actually sold, so announced bid prices may or may not mean anything. We can't see, therefore, how the so-called sale prices at Boston can be used with integrity as establishing the going rate of used equipment in that area.

Sure, it's all probably very legal. But such shenanigans are adding nothing to the stature of the construction equipment industry. Any dealer who insists on a minimum price of an item sold at auction might better label that price in advance and save the auctioneer's fee—or pass it on to the prospective buyer for a quicker sale.

So, you contractors and other auction sale buyers, just remember there's two kinds of auctions being conducted today. At one you're sure to get a square deal. At the other you may or may not.

Looks like it's a case of *caveat emptor*—let the buyer beware!

Rich

Rotary drill on truck on elevated platform on trailer sinks holes in which . . .

Grouted Rails Pin Sliding Railroad Bank

TO SINK 64 vertical holes high up and far back on a steep bank, Allegheny Asphalt & Paving Co. put a truck-mounted rotary drill 10 ft in the air on a platform on a trailer. Operating from a road along the toe of slope, the equipment drilled a line of 8½-in.x15-ft holes into which railroad rails were grouted. These pinned the bank to prevent sliding so it could be cut back to widen the road at its base. Breastboards, placed between the rails as excavation proceeded, helped to hold the difficult ground.

The unusual operation was part of Allegheny's 2-mi, $127,000 widening and resurfacing job at Clearfield, Pa., on U. S. Route 322. Throughout much of its length, the road lies between the Western Branch of the Susquehanna River and the Baltimore & Ohio Railroad's right-of-way, which is benched out of the steep valley side some 30 ft above the highway.

Widening of the road had to be done on the land side because of the nearness of the river. So, to make room for a 2-ft widening strip and 2-ft gutter, plans were to cut back into the bank below the railroad.

When excavation was started, trouble began: What originally was thought to be all weathered ledge turned out to be partly a rock and shale fill, and the bank threatened to move in. How to support it became the problem.

Driving of sheet piling, or of soldier-beam piles to hold horizontal sheeting, was ruled out because hammer impact would have caused a slide. Best solution seemed to be for a rotary drill to sink holes down through the fill into underlying sound rock. Soldiers grouted in these would hold breastboards placed behind them as the outer part of the bank was cut down. This temporary support would let road widening proceed, after which precast concrete cribbing, installed between sheeted bank and gutter, would support it permanently.

To make room for the cribbing,

the bank had to be excavated to 10 ft behind the gutter. And this meant that the holes for the soldiers had to be collared at an elevation some 10 ft higher than the road.

To reach this height with a truck-mounted drill, Allegheny put the machine on an elevated framework. But the drill had to operate at right angles to the bank because it worked over the rear. So, to enable the unit to be moved easily and quickly (the rig was to drill a total of 64 holes on 5-ft centers in three separate locations), they set the frame transversely on a Rogers 20-ton lowboy semi-trailer drawn by Autocar truck-tractor.

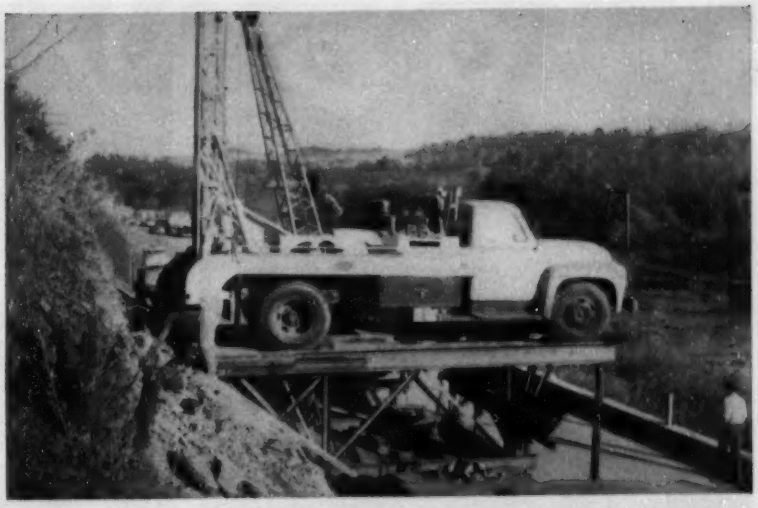
The frame itself, welded of beams and angles, was rigidly held to the 8-ft wide trailer bed by chains and load binders. The frame's 10 x 20-ft top platform extended 6 ft beyond either side of the trailer, and was braced diagonally to the base so the rig could snug up to the bank for drilling.

Sliding horizontal outriggers on the bank end of the platform could be run out to the slope to give additional support to the machine during this operation. Also, two Duff-Norton trench jacks in vertical 4½-in. pipes hanging from the other end of the platform could be extended to the pavement to add rigidity. To get the drill up on the frame originally, the trailer was parked alongside a convenient bank and the machine driven on to the platform.

Self-Contained Drill

The drill was a Mayhew Hurricane rotary on a Ford F800 truck. Rotary table, pulldown and draw works of the Hurricane are driven by the truck engine through a split-shaft power take-off and transfer case, as is a 400-cfm Gardner-Denver compressor on the rig. The compressor furnishes 40-lb air for blowing drill cuttings from the hole. The drill's 31-ft mast carries a 20-ft Kelly to which, on this job, an 8½-in. dia Hughes roller bit was directly attached.

For drilling, the truck-tractor spotted the equipment assembly at the bank. Outriggers were run out, jacks extended, and the drill backed into the slope. Holes were drilled 15 ft deep. This put the lower part 5 to 7 ft in sandstone under the shale fill, and bottomed them 5 ft below pavement elevation. On completion of a hole, the drill was driven forward until its weight was centered on its plat-

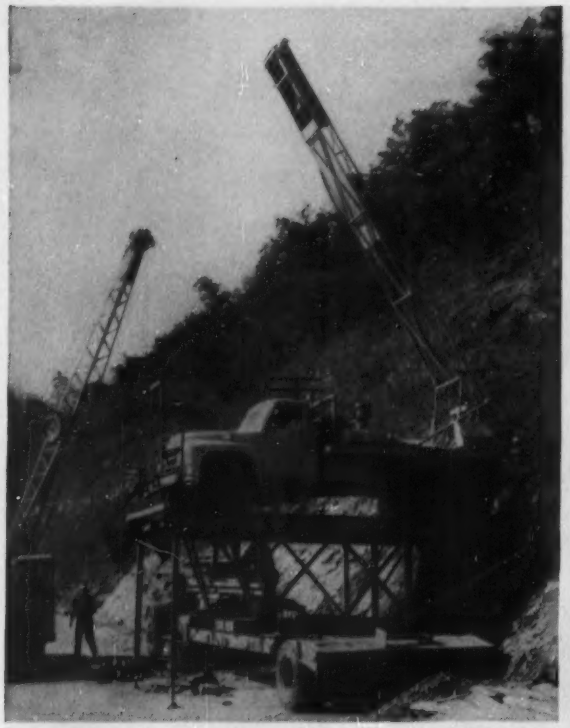


ROTARY DRILL perches on elevated framework to put down holes to pin sliding bank on Pennsylvania highway widening job. River (rear) makes it necessary to cut into hillside.

STEEL FRAME is carried by lowboy trailer. To steady it during drilling operations, front overhang is braced to pavement by extending two trench jacks in hanging pipes.

SLIDING OUTRIGGERS at rear of frame are extended to steep bank to prevent tipping.

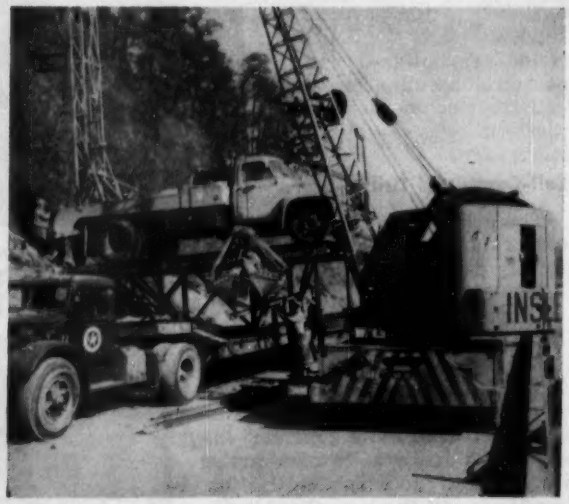
ROLLER BIT that drills 8½-in. holes 15 ft deep is attached directly to 20-ft Kelly.



DRILL MAST is lowered by twin rams in preparation for move to next hole. Mayhew Hurricane drill is on Ford truck, whose power take-off operates drill and 400-cfm compressor for hole blowing.

STEEL RAIL suspended by cable from clamshell is lowered into drilled hole by Insley truck-crane. Bottom 5 ft of 15-ft length of rail will be grouted into rock to act as soldier-beam pile.

TRUCK-TRACTOR pulls equipment 5 ft ahead to drill next hole. Three separate 100-ft stretches of steep bank have to be pinned through holes on 5-ft centers, so mobility is of prime importance.

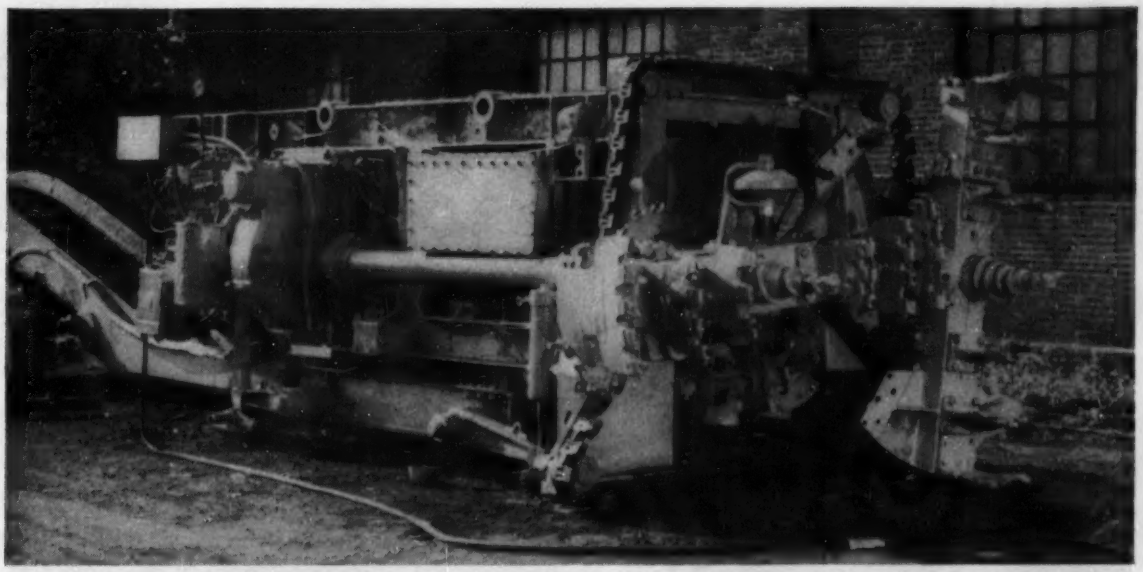


COUNTERWEIGHTS, eight 15-ft lengths of 80-lb rail, are threaded into front of elevated frame to help balance drill rig more evenly. Insley clamshell that excavates bank also handles rails.

form, outriggers and jacks were retracted, and the truck-tractor pulled the assembly 5 ft ahead to the next hole location. Average over-all cycle time per hole was less than 40 min, of which 15 to 20 min were spent in drilling.

A 15-ft length of 80-lb rail was dropped in each hole and its bottom 5 ft grouted into the rock. Then, as an Insley truck-crane with an Owen bucket clammed out the bank, 2-in. horizontal boards were set between rails to hold the ground.

For Allegheny Asphalt & Paving Co. Inc., Pittsburgh, Frank Brozick was superintendent and Joe LeTerza was engineer. George E. Nagele was district engineer and William Brown was resident for the Pennsylvania Dept. of Highways.



MCKINLAY SLOPE DRIVER waits above ground before mining a 2,800-ft water tunnel under Arkansas River. Two cutter-arms on front revolve to dig overlapping circular holes; endless mining chain on frame cuts out connecting tangents between them, top and bottom.

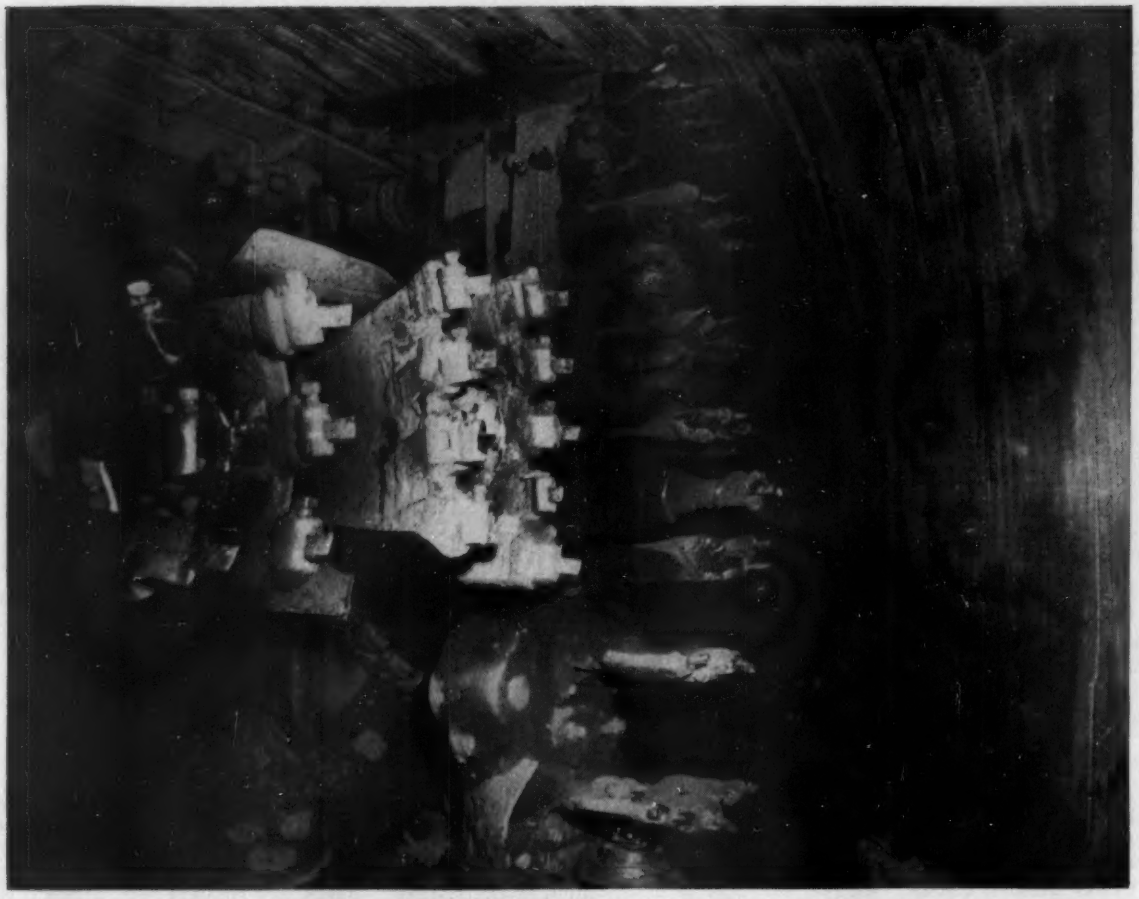
Machine Bores Tunnel Through Shale

ANOTHER MINING MACHINE has been taken out of the coal fields and put to work on construction (also see: Continuous Miner Digs Sewer Tunnel, CM&E, Oct. '53, p. 54). This time it's a McKinlay Slope Driver, with which S. E. Evans Construction Co. is pushing a 2,800-ft water tunnel through shale beneath the Arkansas River at Fort Smith. The machine is advancing the 7x12-ft bore an average of 20 ft in 8 hr, but best progress is nearly double that figure. Total underground crew: Just five men.

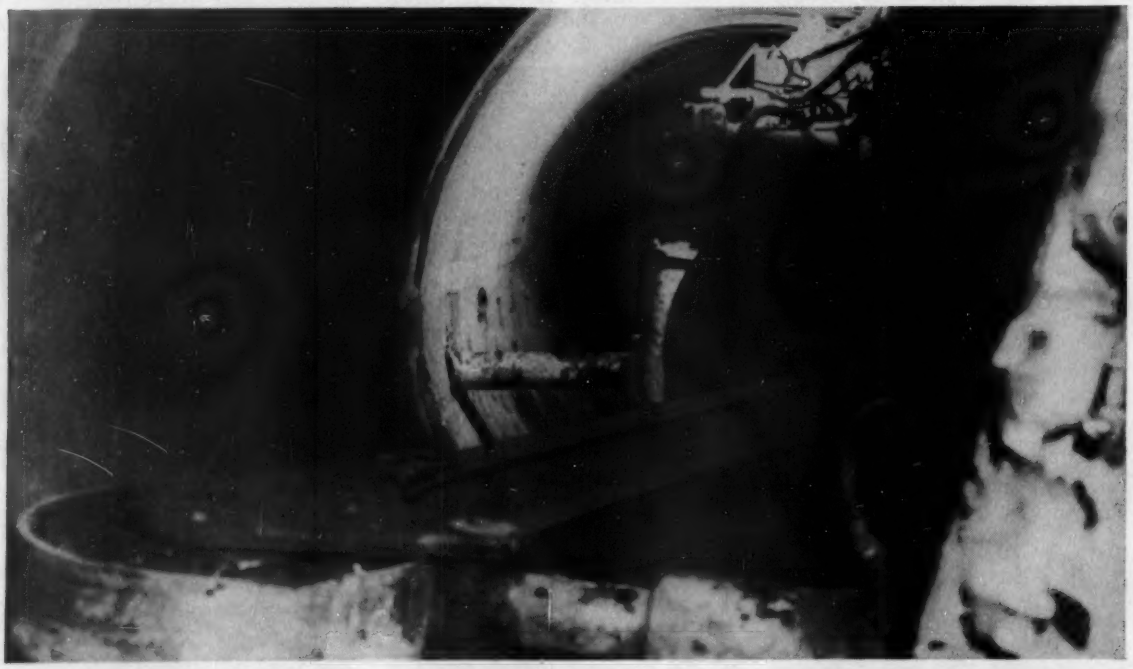
Tunnel invert is 80 ft below river bottom, and there is a minimum 38 ft of flat-bedded shale cover over the arch. On top of this lies river sand and silt. The shale varies from soft to extra hard, but needs roof support only where it is weakened by faults or other malformations.

On one side of the river the bed of shale outcropped, so the Evans

TUNNEL TRANSITION, where ordinary drilling and blasting was superseded by machine mining, shows contrast between two methods. What appears to be concrete lining in 7x12-ft oval-shaped bore is just smooth surface of shale left by mechanical miner.



CUTTER-ARMS on front of machine each carry eight sets of digging teeth in paw-like holders. Between paws are hardened roller cutters that help break out shale from tunnel face. Arms are 7 ft long and set 5 ft apart, and are driven by 75-hp motors.



TRANSVERSE RAMS with roller ends, one on each side of machine, help hold it in place while digging and guide it during travel. At rear is pipe spud to tunnel wall from ram that advances rig. Here it is set up to back machine away from face for taking photo.

firm started driving at this point. After tunneling 410 ft on a 13½-deg down-slope, the crew leveled off in a curve and began working up a ½% grade, thus letting seepage water collect at one point behind them for easy disposal.

With the exception of a short stretch at the portal, the tunnel is being mined with the McKinlay machine. Construction company president S. E. Evans estimates that this is twice as fast as mining by conventional methods. However, he has had to alter and revise the rig considerably.

Main digging elements of the Slope Driver are two propeller-like rotating cutter-arms on the front, each driven by a 75-hp dc electric motor. Arms are 7 ft long and are mounted on separate horizontal shafts 5 ft apart transversely. While the arms revolve in the same vertical plane, they are synchronized 90 deg to each other so there is no interference during rotation.

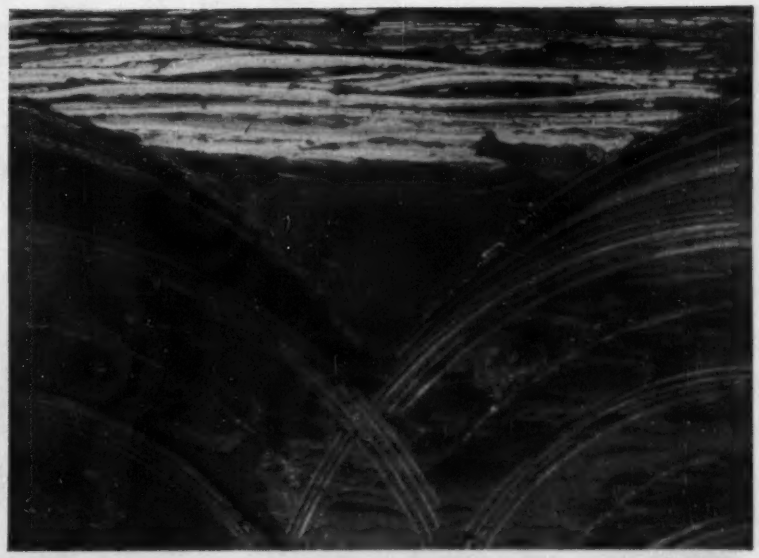
The arms carry sets of teeth that cut out overlapping circular holes 7 ft in dia. Behind them, a series of bits on an endless mining chain cut connecting tangents to the two circles at top and bottom. Thus the machine mines out an oval-shaped tunnel 7 ft high and 12 ft wide.

Rig Slides on Invert

The Slope Driver is supported by a sledge runner at each of its four corners. These are fitted with vertical hydraulic jacks so the machine can be raised, lowered, or tilted in any direction. Transverse hydraulic rams with roller ends control side movement and help hold the rig in position while mining. The machine is advanced by a single ram with a 3-ft stroke. This acts through two pipe spuds to seats chipped out of the tunnel walls.

As the mining machine advances, its rotating arms cut 12-in.-minus chunks of shale from the face. These are moved by paddle-wheel device to a drag-chain conveyor extending through the rig. The conveyor discharges into a following hopper car made especially for the Evans firm.

Riding the same 42-in.-gage track as the muck train (6-yd Sanford-Day drop-bottom cars drawn by 7-ton Cuttler battery locomotive), the hopper car is fitted with its own built-in drag-chain conveyor for loading a muck car behind it. The hopper holds better than 6 yd of muck. Thus mining



TUNNEL FACE reveals machine's cutting pattern, indicates how 12-in.-minus chunks of shale are broken out. Top photo, at center of tunnel arch, shows grooves left by teeth and rollers mounted on rotating arms and bits on mining chain. Bottom photo is near wall.

HOPPER CAR fed by mining machine's conveyor acts as surge pile so excavation can continue while muck cars are shifted. Like miner, it carries its own drag-chain conveyor.

ROOF FALL is blocked to hopper-car conveyor while Sullivan air tool drills hole in wall for pin that will hold permanent timbering. Fault in shale caused this fall, one of few.

← TUNNEL PORTAL, in surface outcrop of same shale layer that extends under river and through which bore is being driven, is scene of job conference between Public Works Commissioner Jay Medlen; machine operator Delmar Jordan; and contractors S. E. Evans and Fred McLane.

can continue uninterruptedly while muck cars are shifted. Nor must mining be stopped while track is extended: There's enough leeway between Slope Driver and hopper car for the addition of a 10-ft section of track.

The heading is ventilated by a 31½-in. Buffalo 45 fan exhausting through 24-in. Armco corrugated pipe installed in 20-ft lengths. At the face, water sprays keep down dust.

Only Five Men Under Ground

Heading crew is five men: One operator and one helper on the Slope Driver, two track men, and one locomotive operator. (The hopper car does not require a separate man). This crew advances the 7x12-ft tunnel more than 20 ft per 8-hr day. Maximum advance to date has been 37 ft in 8 hr. However, Fred McLane, general superintendent and vice-president of the Evans outfit, says that further planned remodeling of the mining machine will result in a minimum 30% increase in its efficiency. And he predicts that this will add 10 ft to the average daily advance.

When the Slope Driver has tunneled to the far side of the river to connect with a vertical shaft, it will be retrieved backwards through the bore. Then Evans will lay a 48-in. precast concrete pipeline (5½-in. wall thickness) in the tunnel. After the pipe is encased in poured concrete (6 in. top and bottom, 12 in. on sides) the ends of the tunnel will be concreted closed around it to complete the river crossing job.

The work is part of a $2,850,000 water line that will increase by 50% (6 mgd) the supply to Fort Smith, Ark. Jay Medlen is the city's Public Works Commissioner. W. R. Holway & Associates, Tulsa, are consultants on the project, and John F. Green is their resident engineer.

Contractor for the 2,800-ft, $450,000 bore and water line beneath the Arkansas River is S. E. Evans Construction Co. Inc., Fort Smith. J. P. Creek is contractor's engineer and is in charge of the tunnel operation.

Get your free copy of the 1953 editorial index for CM&E by writing to:

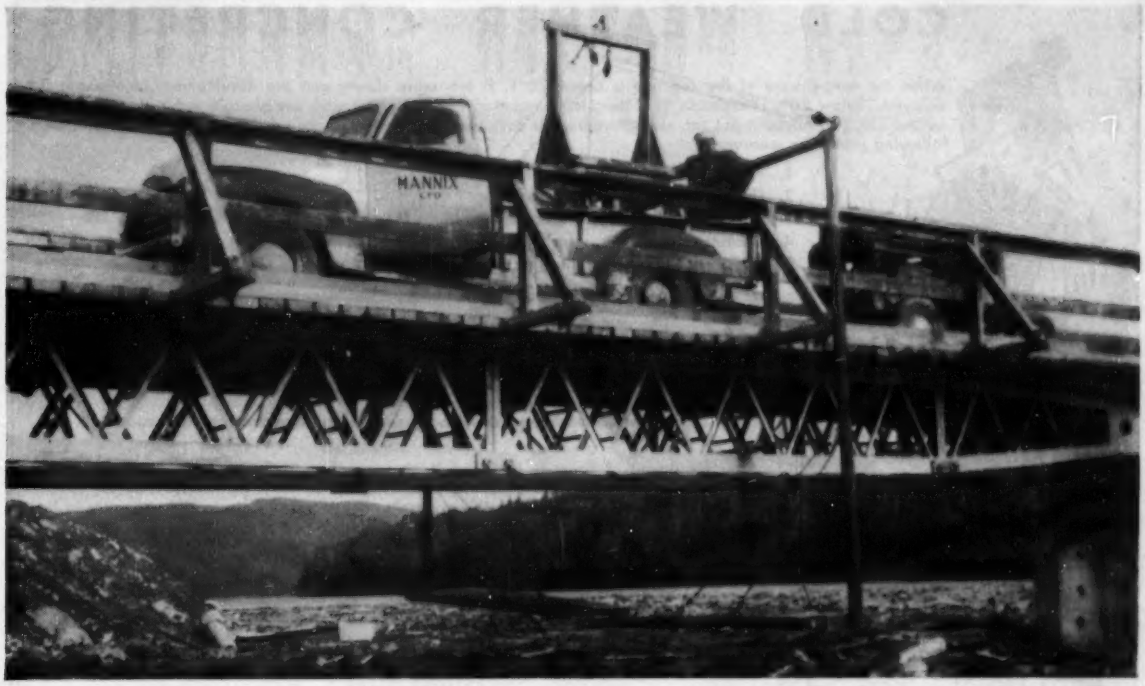
THE EDITOR

Construction Methods & Equipment

330 West 42nd St.,

New York 36, N.Y.

Copies will be mailed only upon request



HANGING SCAFFOLD moved from span to span by truck on bridge deck provides adequate space for underside painting and welding.

Mobile Scaffold Saves Man-Hours of Rigging

WELDING AND PAINTING the underside of a steel truss bridge in Quebec involved one trip for the welder and two for the painter. To avoid extensive rigging for these operations, the contractors, Mannix, Ltd., devised a mobile scaffold cantilevered on each side from a frame mounted in the body of a truck which traveled along the bridge deck. Arms were pivoted at the frame so the scaffold could clear the piers when moving from span to span. Winch mechanism was cobbled up from a skip hoist borrowed from a concrete mixer. A small gasoline-engine-driven shop compressor that provided air for spray painting and a trailer-mounted welding machine made the operation completely mobile.

PIERS ARE PASSED with ease as platform is lifted out of the way by pivoted frame attached to truck body.

RIVER FULL OF PULPWOOD lies below welder (above) as he stands on scaffold platform putting finishing touches to bridge substructure.

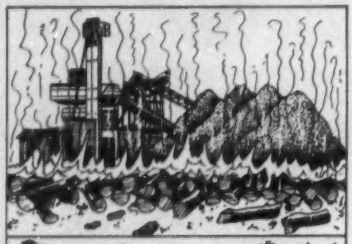
COLD WEATHER CONCRETING

When the temperature of the concrete is below 70°F. it sets more slowly and the development of strength is delayed. Below 50°, retardation of setting is pronounced and early strengths are sharply reduced. At slightly below 32°, concrete will not set. Job planning for cold weather concreting should include one or more of the following protective measures:

1. Addition of calcium chloride to the mix.
2. Use of high early strength cement.
3. Heating the water and concrete materials. (See other side.)
4. Heating the area in which the concrete is placed.
5. Special provisions for curing.

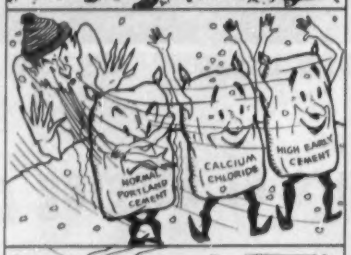
TIPS ON COLD WEATHER CONCRETING

Raise temperature of forms, adjacent concrete and sub-grade above freezing.



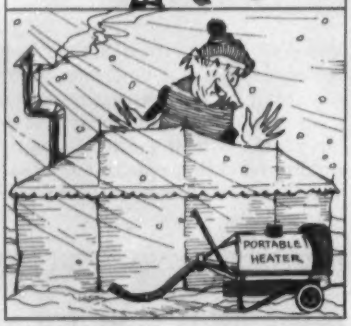
After placement of concrete in forms, if air temperature is below 40°F., concrete temperature should be at least 50°, but not above 90°. See chart on reverse side for temperature control of concrete mixes. In addition to heating water, it may be necessary to heat aggregates.

(CAUTION: When heated materials are used in concrete mixes, add cement last to prevent flash sets.)



Use calcium chloride or high early strength cement to speed up setting and gain in strength when moderately low temperatures are expected. Calcium chloride, up to 2% of the weight of cement, may be used.

(CAUTION: Don't depend on chemicals or special cements when air temperatures drop below 50°F., unless insulation against heat loss is provided.)



Thin slabs lose heat rapidly. Protect from wind and provide heated enclosure if necessary to keep concrete temperature above 50°.

(CAUTION: Don't get on slabs too soon.)

Provide insulation or heated enclosure to maintain concrete temperatures for minimum periods as shown:

	TEMPERATURE OF CONCRETE 70°F. OR 50°F.	
Plain Concrete	3 days	7 days
Plain Concrete with Calcium Chloride	2 days	3 days
High Early Strength Concrete	2 days	3 days

After periods shown above, maintain concrete temperature above 40° for at least four days.

(CAUTION: Leave protection in place so that temperature of concrete will not drop faster than 20° in 24 hours. When heat is used, don't allow concrete to dry out.)

Curing, with provisions for maintaining concrete temperature, should continue until concrete develops AT LEAST 65% of its designed strength.

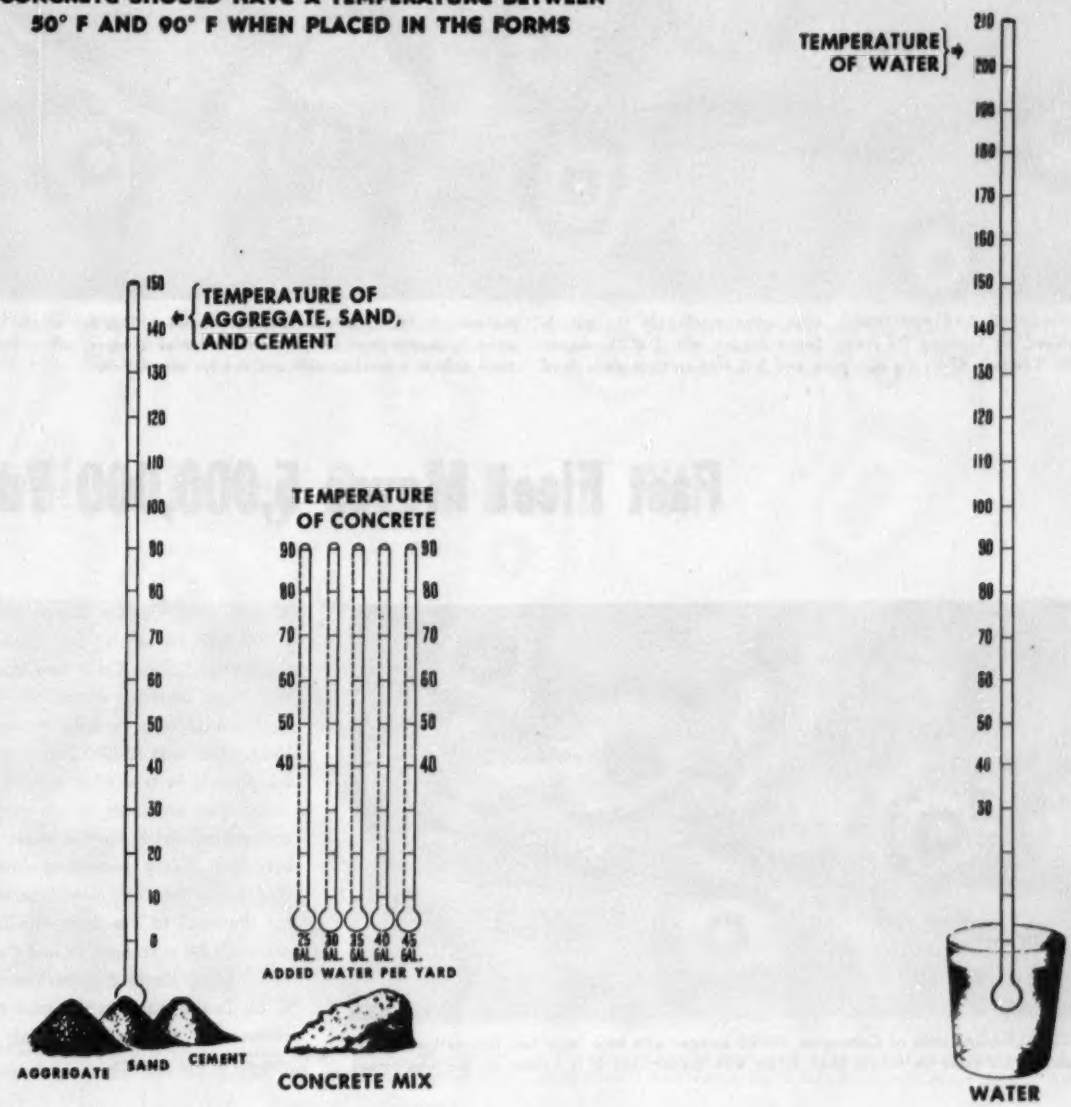
Good Concrete in Cold Weather

Cold weather concreting is big business now and helps to level off seasonal cycles on many construction operations. But certain preparations must be made in advance and special precautions taken while mixing, pouring and curing. The rules are relatively easy, but deviations during cold weather may mean much "rework' for a contractor.

Master Builders Co., manufacturer of Pozzolith, issues an extremely valuable wall poster that demonstrates with a few short sentences and interesting sketches just what to do in cold weather. The back of the card (right) features a temperature chart that makes it easy to control temperatures of concrete mixes. Both sides of the card are reproduced on these pages.

Temperature Control Of Concrete Mixes

CONCRETE SHOULD HAVE A TEMPERATURE BETWEEN 50° F AND 90° F WHEN PLACED IN THE FORMS



HOW TO USE CHART

1. Place rule on the center thermometer at the desired Temperature of the Concrete Mix — using the thermometer which shows the gallons of water to be added to the mix.

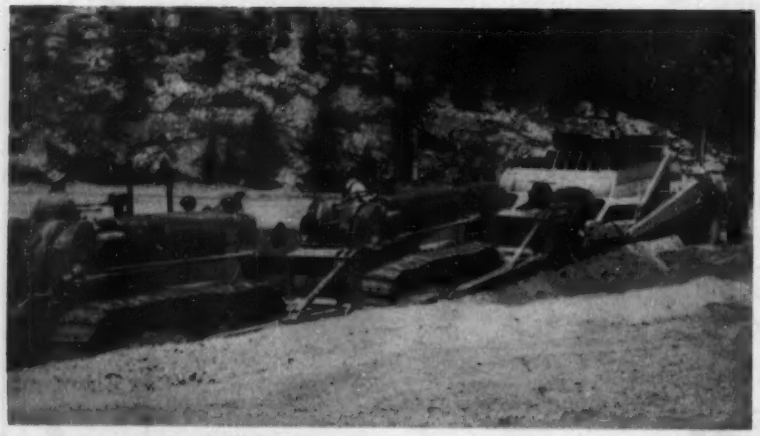
NOTE: (a) If sand is surface dry, use the solid line on the body of the thermometer as pivot point. (b) If 3% moisture in sand, use dotted line on body of thermometer as pivot point.

2. PIVOT rule at this point and swing the left end of the rule to the actual temperature of the aggregates, sand and cement.

3. The Temperature of the mixing water is read on the right, at the point where the rule crosses the thermometer.

HIGH-SPEED EARTHMOVING, even when turning in the pit, is achieved by teaming D8-drawn Sierra loader with DW20 scraper units. Loader's 42-in. dia disk plow and 5-ft side-cutting blade feed material to 48-in. belt conveyor 27 ft. long. This has ample clearance to dump over built-up sideboards of scraper, which here is used only as a hauling unit and not for excavation.

Fast Fleet Moves 5,000,000 Yd for



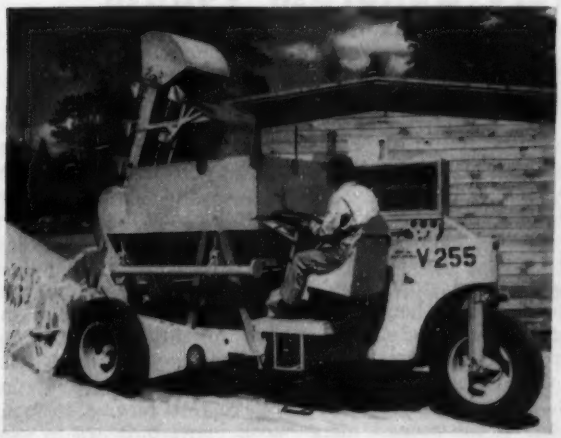
FAST SELF-LOADING of Caterpillar DW20 scraper with help from two International TD-24 push-tractors takes no longer than filling with loader, but it is harder on the equipment.

• Last year, Bechtel Corp. placed 2,000,000 yd of fill for Southern California Edison Co.'s new dam in the High Sierras, where the construction season is only 6 months long. The rest (3,000,000 yd) will be placed in a similar season this year. Key elements in moving this amount of dirt in such a short time are two Sierra elevating loaders that dump into Cat DW20 scrapers for the haul to the dam—the loaders each fill a scraper in less than 1 min. How Bechtel superintendent K. O. Taylor handles this and other phases of the hurry-up job are shown in the photos.

EFFICIENT PREPARATION of embankment calls for tandem disk to blend material and distribute moisture properly. Unit is drawn by counterweighted DW20 tractor fitted with extra-wide rims and ballasted oversize tires. In rear, DW21 pulls 50-ton compactor.

SIMPLE SCALPING of pit-run material separates cobbles for use in drains. Bay City CraneMobile with dragline bucket feeds portable grizzly, from which fines fall into Chevrolet trucks and cobbles slide into Ford. Other excavators on dam job are two 2½-yd shovels (Manitowoc and Northwest) that dig pervious-fill material. It contains rock that might be hard on elevating loader.

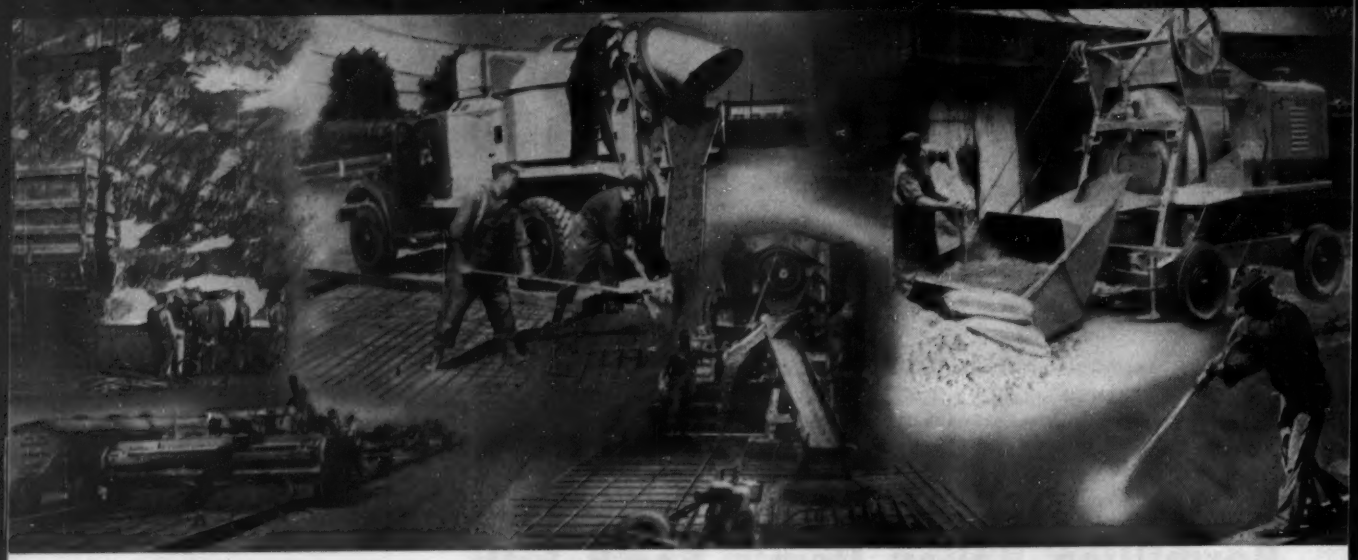
Vermillion Valley Dam's Earth Fill



ECONOMICAL BATCHING of relatively small amount of concrete needed on job is handled by mobile Williard Weigh-Batcher that self-loads aggregates from stock piles, weighs each size into proper compartment and dumps batch into Transcrete mixer on GM truck.

SPEEDY DELIVERY of fill to dam is over wide, well-maintained haul roads. All DW20 scrapers as well as shovel-loaded fleet of Kenworth 14-yd end-dump trucks are equipped with overdrives, so can carry their 30-ton loads at 40 mph on average 2-mi haul.

CONCRETE MIXING AND PLACING



5. Highway and Airport Concrete Plants

By THEODORE B. APPEL, Jr., Chief Engineer, The C. S. Johnson Co., Subsidiary Koehring Co.

Part 1...

IT IS LOGICAL to consider concrete plants for highway construction and plants for airport construction together, for they have much in common. What is said of either will apply to the other. Airport operations pattern after highway procedures which were pretty well established before there was a need for the modern concrete runway.

The common procedure in both cases is to batch aggregates and cement in batching plants, haul these materials to the site of paving operations in batch trucks and mix them in a paving mixer. Concrete is placed on the subgrade with the paver's boom and distributing bucket.

• **In the early days** of concrete road construction the contractor usually set up his aggregate bin adjacent to a railroad siding. Sand and stone were received in gondola cars, unloaded by a clamshell bucket and stock-piled between the siding and the bin.

Bagged cement was received by rail in boxcars and often stored in a rented shed to provide a supply which was drawn upon when the cement cars were not received as scheduled.

Compartmented batch - trucks were loaded with sand and stone at the bin. The batch-truck then stopped at the cement car where the bags of cement were thrown directly on top of the aggregate in each compartment. Laborers emptied the cement bags at the scene of paving operations immediately prior to the dumping of the batch into the skip of the mixer.

In those days the volumetric batcher was used extensively. Later, single and multiple-material scale batchers came into use.

One of the most popular bins then was a two-compartment wood panel bin. The wood panels were made of 2-in. thick timbers. These panels rested in a cradle fabricated of steel angles. Steel angle legs furnished support for the cradle.

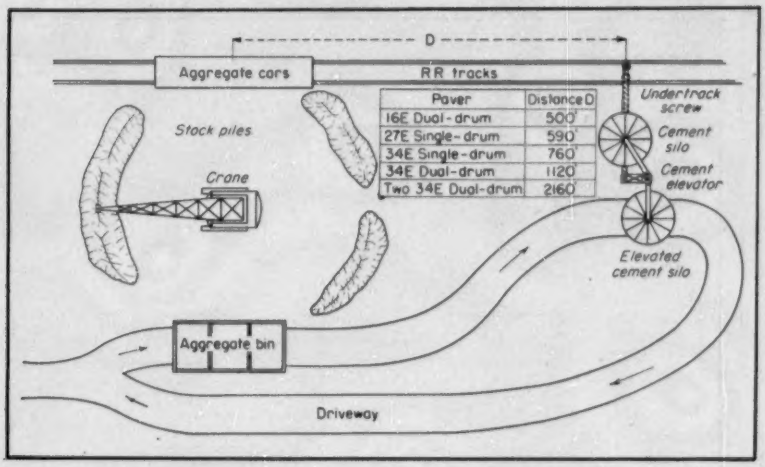
Wood panel bins were readily erected with a light crane. The same crane, equipped with a clamshell bucket, was used to charge the bin. Two volumetric batchers, one for sand and one for stone, were hung from the bin bottom. The batchers had a guillotine-type gate which controlled the flow of material from the bin above.

In many respects the road builders' wood bins and volumetric batching plants were similar in appearance to the semi-portable aggregate batching plants in use today. The wood bins were low in cost and gave good service; in fact, many wood panel bins are in use today. The original volumetric batchers have all been replaced by single-material weigh batchers.

Pavers

• **The paver is the key** to concrete operations for highway and airport construction. It determines the speed with which the contractor can fulfill his contract. It determines the size of proportioning and material-handling equipment, which together are his batching plant. The paver and its distance from the batching plant determine the number of hauling units needed to keep operating.

The modern concrete paver is a highly specialized piece of equip-



Paver	Distance D
16E Dual-drum	500'
27E Single-drum	590'
34E Single-drum	760'
34E Dual-drum	1120'
Two 34E Dual-drum	2160'

Fig. 1. . . . TWO-STOP BATCH PLANT LAYOUT with materials arriving by rail. One clamshell unloads aggregates, keeps bins filled. Cement is unloaded by under-track screw and bucket elevator.

ment which has been developed intensively during the last 20 to 25 yr, and which can be depended upon to perform its job efficiently. Small pavers are mounted on pneumatic tires; larger units are crawler-mounted with wide treads and low road pressure to reduce the tendency to tear up the subgrade when it is necessary for the paver to operate directly on it.

An accompanying table shows the expected output of four different pavers, those in most general use today. The quantities given in this table are based on an output of 85% of the theoretical output for single-drum pavers, and 75% of the theoretical output for dual-drum pavers. The 16E dual-drum unit is usually rubber tire-mounted.

The table is based on a mix consisting of 565 lb of cement and 3,235 lb of aggregate per cu yd of concrete. For the 16E paver the quantities would be 368 lb of cement and 2,100 lb of aggregate for the .65-yd batch. For the 27E paver the mix would be 620 lb and 3,560 lb for the 1.1-yd batch, and for the 34E pavers it would be 780 lb of cement and 4,460 lb of aggregate for the 1.38-yd batch.

In all cases batches for the pavers include the name plate capacity plus 10%, which is the rated mixer capacity in accordance with the regulations of the Mixer Manufacturers Bureau. Variations in the mix will not effect the production rates given above but will change proportionately the quantities of cement and aggregate per hour per day, and the number of railroad cars of material required to keep pavers busy.

• **Production quantities** of concrete are based on a 60-sec mixing time. The 60-sec mixing time is specified by approximately 70% of the state highway departments in the U. S. Several allow a shorter mixing time while the balance require a slightly longer mixing time.

Pavers on the market today can be depended upon to do an excellent job, and to give long life with a minimum of breakdowns. The 34E dual-drum is the real workhorse among pavers because of its high production.

Operation of the unit is as automatic as is practical. There are certain operations which will always have to be controlled by an operator. For instance, the operator must retain control of the skip hoist so that the skip will not start up with a truck still discharging into it. The operator also must control bucket travel and bucket boom when distributing concrete. Intermediate steps are controlled adequately by batchmeters or other automatic controls furnished with the pavers. They take away from the operator the necessity of doing needlessly repetitive jobs which can be better accomplished automatically. Automatic devices can control various operations with split-second accuracy, reducing to the very minimum the time required to mix properly a batch of concrete.

Pavers are designed to meet requirements for mixing at the paving site. It seems unlikely that there will be a drastic change or improvement in these units. Any changes likely to occur are such as a reduction in weight without decreasing the ruggedness and dependability of the unit. This may be accomplished through the increased use of high-strength alloy steels. Considerable thought has been given to paver-mixers to insure that they will continue to produce uniform batches of concrete without interruption. Most pavers have a water storage reservoir of sufficient capacity to allow operation for a period of 15 to 20 min without connection to an external water supply. This is more than ample to change the hose connections from an empty tank truck to a full one.

Two-Stop Plants

Fig. 1 shows in plan a typical two-stop plant setup. In this case delivery of both aggregates and cement is by rail. Prior to World War II, except in favored regions, fine and coarse aggregates and cement invariably were delivered to the batching plant in railroad cars. Today is the exception. It is quite common to find rail delivery of at least one or two of the materials. Also, relatively long distance delivery of sand, gravel or crushed stone and cement is found to be increasingly common.

Fig. 1 shows three aggregate

Paver Production and Quantities

For 60-Second Mixing Time

	Single-Drum Mixers		Dual-Drum Mixers	
	27E	34E	16E	34E
Concrete—Batches/Hr	42	42	65	65
Concrete—Cu Yd/Hr	47	59	42	90
Concrete—Cu Yd/8-Hr Day	376	472	336	720
Cement—Barrels/Hour	70	89	63	135
Cement—Barrels/8-Hr Day	560	712	504	1080
Cement—Cars/8-Hr Day (1)	1.6	2.1	1.5	3.1
Aggregate—Tons/Hr	76	96	68	146
Aggregate—Tons/8-Hr Day	608	768	544	1168
Aggregate—Cars/8-Hr Day (2)	12.1	15.4	10.9	23.4

NOTE: (1) A cement car is assumed to hold 350 bbl of cement.
(2) An aggregate car is assumed to hold 50 tons of aggregate.

COMMENT
from the
BUTLER ENGINEER

of Barbers . . . . Roadbuilders and Aspirin

Stuck my head in a barber shop. Saw one empty chair, barber there waiting. So I sat down in his chair. The barber *at my right* said,

"It'll be only one minute, sir."

I turned and took a good look at the barber in back of me . . . it was a dummy!

"Whatinhell!" I said.

The live barber finished with his customer and moved over to me explaining,

"We've noticed lately that people will look in the door and if there isn't a barber ready, they'll go right out. With the dummy here they stay. But everyone's in a hurry — too keyed up today. Can't stand the thought of waiting a few minutes."

"Great Day!" I said, "What a commentary on modern living!"

"Isn't it!" said the barber as he moved the dummy to the next chair.

Well, it's strictly no fun waiting for a new Roadbuilders' Plant when you've got a job ready to go. The roadbuilding volume will be just as big in '54 (perhaps bigger). You're sure of successful bids, lower costs and better profits with a Butler Plant. So, be safe! Order your plant now for a specified delivery date this Spring. Don't get a job and then wring your hands and our neck for a plant.

At the Metal Show I saw an exhibit with a counter simply loaded with aspirin, Bromo Seltzer, Alka Seltzer — every such remedy known. A sign said "HEADACHE CORNER — help yourself" . . . Made me think of myself — the Butler Engineer. But we don't cure headaches — *we prevent 'em,* for you, that is.

We'll all build more — in 54.

The Butler Engineer

BUTLER BIN COMPANY
WAUKESHA, WISCONSIN

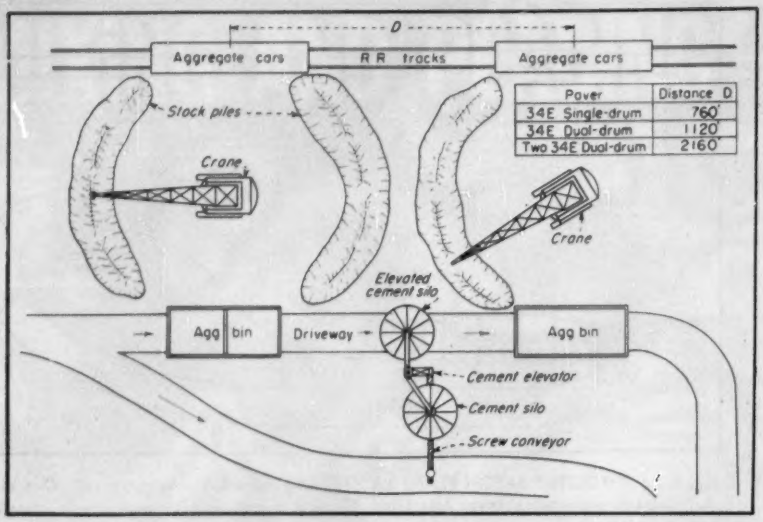


Fig. 2 . . . THREE-STOP PLANTS are one way of meeting requirement that cement be placed between aggregates in a batch. Two-stop setup could be used, but it would slow production.

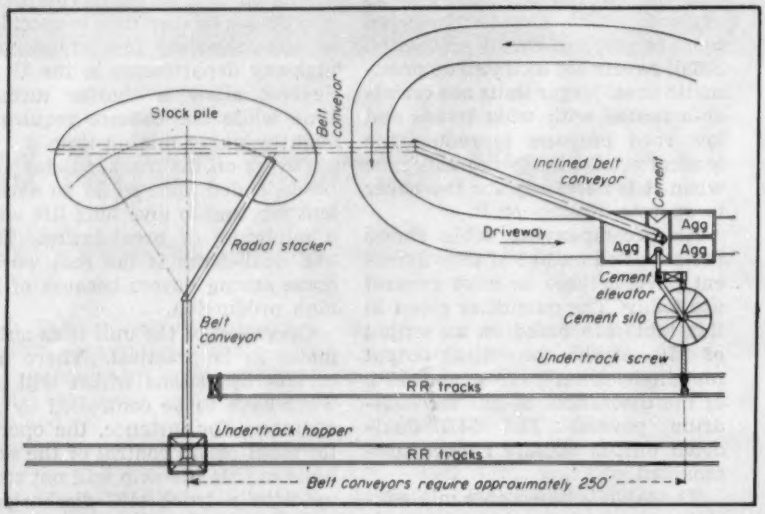


Fig. 3 . . . ONE-STOP PLANTS are more expensive but have high capacities through belt conveyor materials handling over longer distances. One-stop plants usually are fully automatic.

stock piles; one for each material. Approximately 50% of the states require some storage at the job site of the fine and coarse aggregates. If such storage is not required, the contractor still must provide a stock pile sufficient to insure uninterrupted operation of his plant.

The plan view of the two-stop plant shows hopper-bottom car unloading facilities for cement, a bucket elevator, a cement storage silo erected over top of the screw conveyor which conveys cement from the track to the bucket elevator, and a storage bin over a driveway below which is hung a cement batcher. This type of facility, calculated to assure an ample supply of cement at all times, is more elaborate than is sometimes warranted.

An inclined bucket elevator might be used in place of the facilities shown. In this less elaborate setup the contractor either must have an absolutely dependable supply of cement in hopper-bottom cars and the use of these cars as storage facilities, or dependable delivery by truck, with the use of trailer units for some storage.

In the two-stop plant shown in *Fig. 1* the three aggregates are unloaded from gondola cars by a crane which can either charge the bin directly or place the material in the stock pile. The distance be-

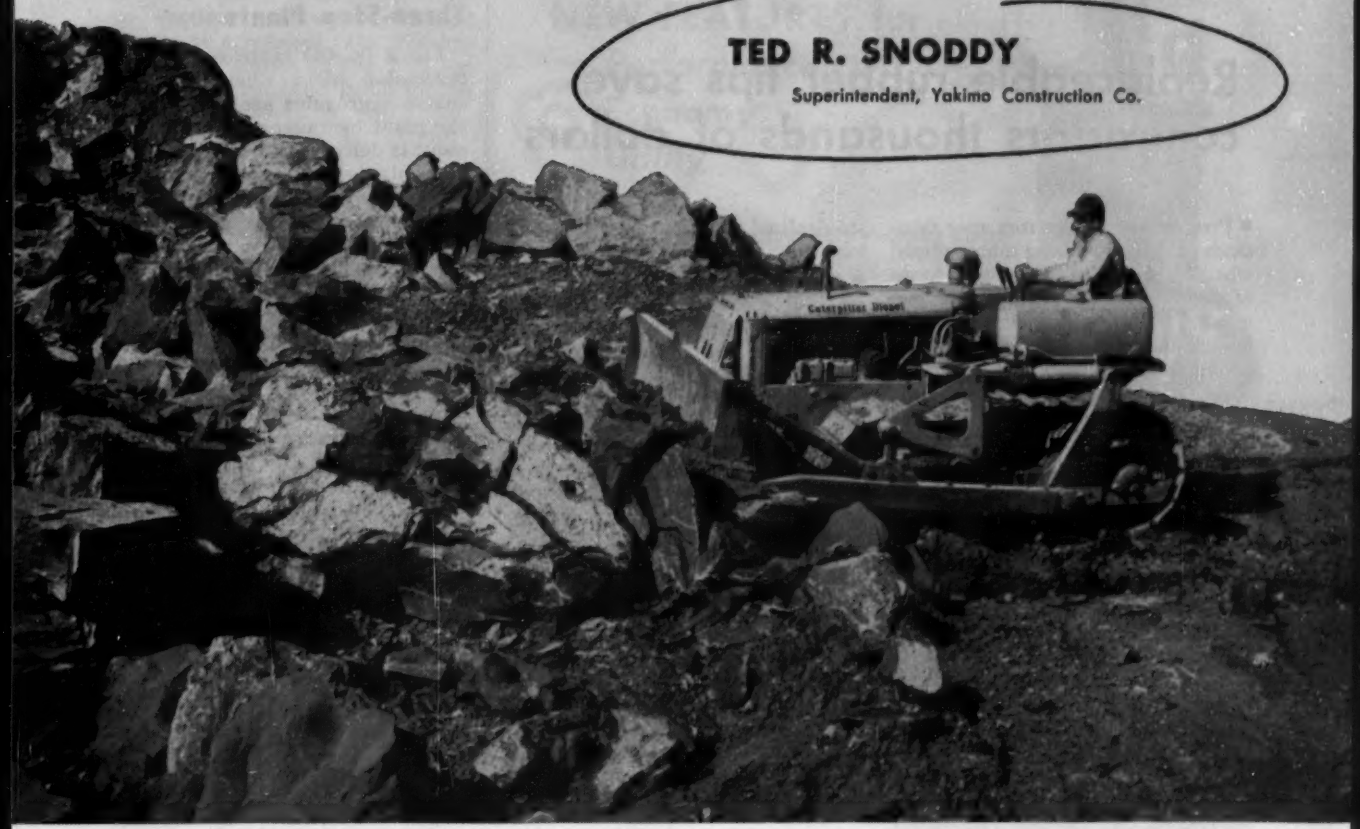
(Continued on page 70)

"When I bought this CAT* D4 Tractor, it took the place of 20 men.

"It saved me about $100 a day on expenses.

"This tractor has paid for itself about four times and no repairs."

TED R. SNODDY
Superintendent, Yakima Construction Co.



A Caterpillar D4 Tractor equipped with a No. 4S Bulldozer clears rock in the quarry for easy access by trucks. Owned by Yakima Construction Co., Dallas, Tex., this equipment is working on the Blakely Mt. Dam, Mt. Pine, Ark. The Yakima Construction Co. has the rock job for the 4,500,000-yard dam.

What else is there to say?

The money-saving performance of this Caterpillar D4 Tractor and No. 4S Bulldozer speaks for itself. Ask your Caterpillar Dealer for a profit-building demonstration on *your* job.

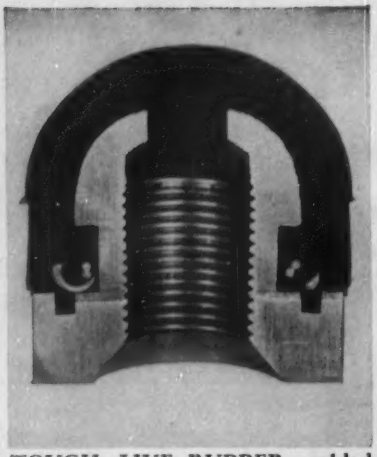
Caterpillar Tractor Co., Peoria, Illinois.

CATERPILLAR*

*Both Cat and Caterpillar are registered trademarks—®

NAME THE DATE... YOUR DEALER WILL DEMONSTRATE

(Advertisement)



TOUGH, LIVE RUBBER molded on Viber replaceable tip prevents vibrator damage to costly forms.

COILED SPRING around steel base firmly anchors rubber molded completely through and around tip.

Replaceable rubber tips save contractors thousands of dollars

• **Progressive contractors save** thousands of dollars by using rubber tipped vibrators to eliminate damage to forms of plywood and other expensive materials. This means longer form life and less cleanup time. Another important saving is longer housing life because the housing is subject to very little wear, and the tip (where most wear occurs) may be replaced when necessary.

Five years of successful field experience have proved that VIBER'S exclusive patented replaceable rubber tips will stand up under rigorous field conditions. As the result of such experiences, leading contractors like the Robert E. McKee Company have standardized on and use rubber tipped vibrators.

VIBER HOUSINGS LAST two to four times longer because of replaceable rubber tip, which screws on end of housing where most wear occurs. Rubber tip vibrators are available from 1-5/16 inch to 3 inch diameter.

• **Simple design** of Viber's patented replaceable tip combines a machined steel base and a molded rubber body. The base, as illustrated above, provides a positive attachment and mechanical interlocking of the two parts. This prevents any possibility of the rubber coming off in the field until it is literally torn and shredded away by reinforcing steel or the abrasive action of the concrete itself

The machined steel base screws directly on the lower end of the housing. It is designed with the same outside diameter as the housing, so the complete assembly is perfectly smooth and will not catch or hang up in the form.

The vibrator does not lose any effectiveness when the rubber finally wears off, since vibration comes from the sides of the housing Replacement of tip requires only long enough to unscrew the old tip and screw on a new one.

• **These patented replaceable** rubber tips are another example of the progressive design and planning which keeps Viber a leader in the field of vibration. For information on Viber's complete line of internal and external vibrators, contact your authorized distributor or VIBER COMPANY, 726 South Flower Street, Burbank, California. Dept. 68.

VIBER

CONCRETE VIBRATORS SINCE 1931

CONCRETE . . . Continued from page 68

tween the point of aggregate unloading and the cement facility is dependent upon the daily production required. This, in turn, is established by the size and type of paver.

Except in extreme circumstances such as where there is insufficient track space, it is foolish to locate the cement unloading facilities so close to the aggregate unloading point that the production of concrete is impaired. Again it becomes evident that the key to the entire operation is the size of paver used on the contract. The two-stop plant arrangement illustrated cannot batch fast enough to keep two 34E dual-drum pavers busy.

Three-Stop Plants

Fig. 2 (p. 68) sketches a typical three-stop plant where fine and coarse aggregates are delivered to the plant by railroad cars and cement is delivered by truck. Three-stop plants involve more equipment, more operating personnel, and consequently a greater expense. Certain conditions dictate a three-stop plant:

1. When specifications require that the cement be sandwiched between the aggregates. It is possible to operate a two-stop plant as a three-stop plant, with batch trucks first picking up coarse aggregates, then cement, and finally returning to the aggregate bin to pick up the fine aggregate which will be placed on top of the cement. This arrangement is not conducive to high production.

2. Three-stop plants may be required where the bin is charged with a crane and clamshell bucket, and where specifications provide that the concrete shall be made of one fine and two coarse aggregates, no more than two to be stored in one bin. This provision is placed in the specifications to eliminate contamination of one material, such as occurs to a limited degree when, for example, a crane is charging the center compartment of a 3-compartment bin. This means that the clamshell bucket must be swung over one of the two end compartments. If there is leakage from the bucket, the material in one of the end compartments may be contaminated with material intended for the center compartment.

The arrangement in *Fig. 2* has

considerably more merit than at first meets the eye—for those cases where the batching plant is furnishing materials for two 34E dual-drum pavers. If aggregates are to be unloaded from a rail car and placed in storage with a clamshell bucket, and the bin is to be charged using this same crane and clamshell, it will not be possible for one crane to keep up with the demand.

If unloading operations are to be conducted solely during the night, and the crane used only to charge the bin during the day, one unit quite possibly will suffice. But this is complete dependence upon one piece of equipment. The wiser course is to use two cranes for the aggregates. In case of breakdown of either crane, it still is possible to continue operations, though maybe at a reduced rate. The arrangement shown in *Fig. 2* is too elaborate to batch materials for the 16E or 27E pavers.

One-Stop Plants

Fig. 3 (p. 68) shows a typical set-up of a one-stop plant. These plants are a relatively recent development, brought about by the need for high capacity for paving operations on jobs requiring a large amount of concrete. This requirement is encountered when paving airport runways, aprons and turnpikes.

These plants involve a considerable investment when compared to two- and three-stop plants. Two- and three-stop plants generally are operated manually and have only the simplest of equipment. One-stop plants usually are fully automatic and have the necessary equipment to handle (at low labor cost) large quantities of the materials used to make concrete.

Fig. 3 shows the aggregate received by rail. It is discharged into an undertrack hopper, conveyed by fixed and radial conveyors to a storage pile on top of a reclamation tunnel. The aggregate is reclaimed from the stock pile by drawing it off through gates in the roof of the tunnel, carrying it by belt conveyor to an inclined conveyor which, in turn, dumps it into the batch bin. A distributor directs material to the proper bin storage compartment. (See also "Site Batch Plant Supplies Two Pavers," CONSTRUCTION METHODS AND EQUIPMENT, April 1953, p. 64).

* * *

THE NEXT ARTICLE of this series will appear in the March issue.

NEW! Ramset FASTENING SYSTEM

SUPER-POWER JOBMASTER

takes over where others leave off

NEW FEATURES for
Performance
Economy
Utility

Shortest, lightest, heavy-duty tool

Greatest driving power

New series of power-sealed charges balanced to the tool

Circle-Set Shield, adjustable for 12 positions of handle

Faster, easier operation

All the family characteristics of RAMSET JOBMASTER and PLUS-POWER JOBMASTER are built into the new SUPER-POWER JOBMASTER for heavy-duty fastening into steel up to 1" thick or into hardest concrete. Ask your dealer to demonstrate the many new features which make SUPER-POWER JOBMASTER the outstanding powder-actuated tool for speed, ease, utility and economy, and to show you how it takes over where all others leave off. Or, write us for details.

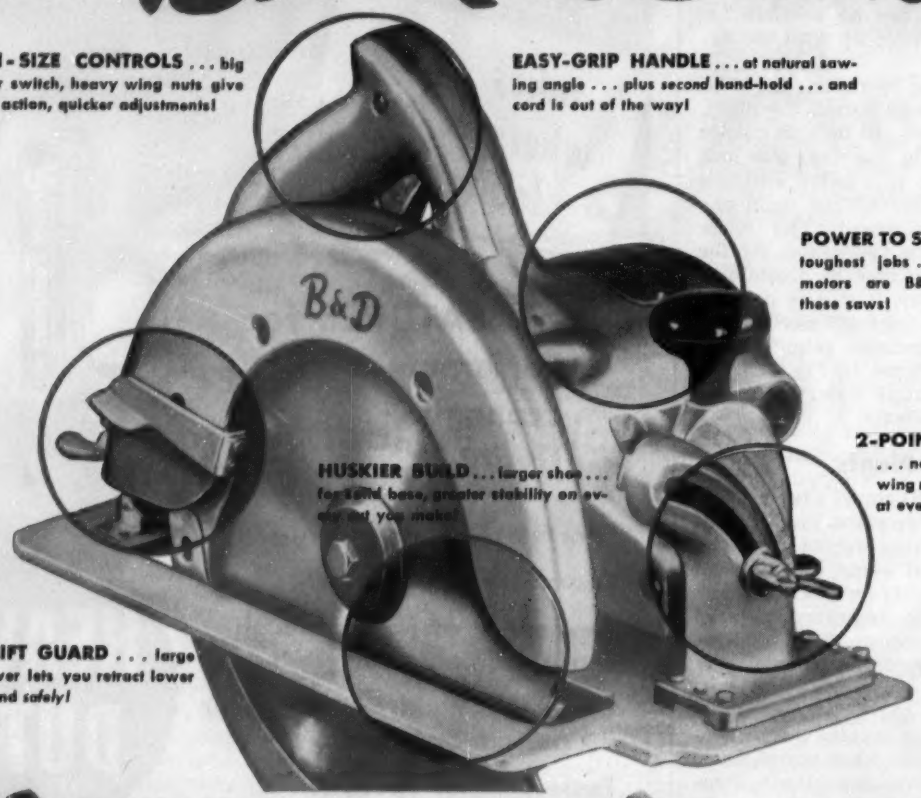
Ramset Fasteners Inc.
12103 BEREA ROAD • CLEVELAND 11, OHIO

Ramset Division, Olin Industries, Inc.

FIRST IN POWDER ACTUATED FASTENING

AN Olin PRODUCT

You asked for all these NEW Black & Decker



MAN-SIZE CONTROLS . . . big trigger switch, heavy wing nuts give faster action, quicker adjustments!

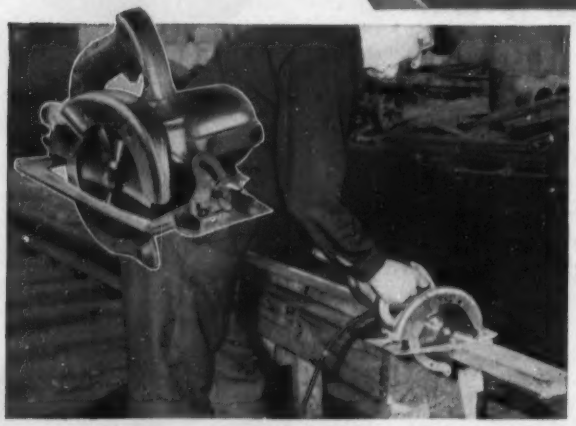
EASY-GRIP HANDLE . . . at natural sawing angle . . . plus *second* hand-hold . . . and cord is out of the way!

POWER TO SPARE . . . on the toughest jobs . . . because all motors are B&D-built *just* for these saws!

2-POINT SUSPENSION . . . not one but *two* big wing nuts hold saw steady at every depth and angle!

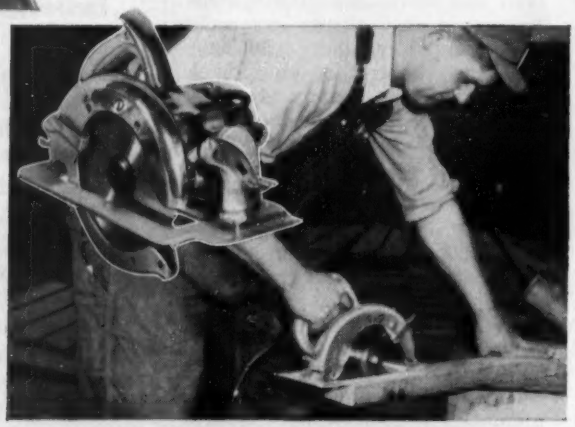
HUSKIER BUILD . . . larger shoe . . . for solid base, greater stability on every cut you make!

SAFETY-LIFT GUARD . . . large guard lift-lever lets you retract lower guard by hand *safely!*



NEW B&D 6″ SAW WITH 8″ POWER!

Yes, for power and performance, the new B&D 6″ Heavy-Duty Adjustable Saw can equal an 8″ saw on many jobs! Cuts from 0″ to 2″ deep . . . bevel cuts from 0° to 45° . . . depth of cut at 45° is 1⅝″. Built-in depth-and-bevel attachment . . . plus all the other new B&D features that make this the greatest 6″ Saw yet . . . . . Only **$64.50**



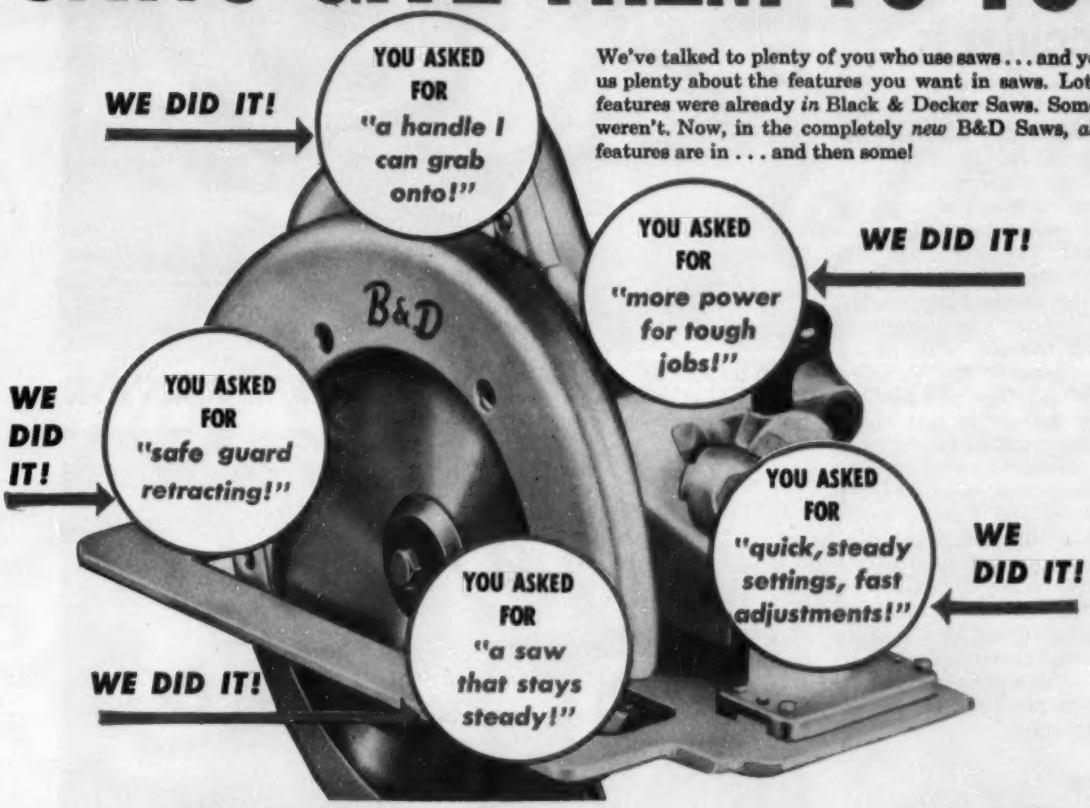
NEW B&D 8″ SAW FOR ALL-ROUND WORK!

Here's your power-packed 8″ Heavy-Duty Saw . . . an all-round saw that just *won't* stall on the job! Cuts from 0″ to 2 13/16″ deep . . . bevel cuts from 0° to 45° . . . depth of cut at 45° is 2 1/16″. Easy to adjust built-in depth-and-bevel attachment, expertly designed and constructed, plus all the other new B&D features . . . . . Only **$96.50**

ALSO: NEW B&D 7″ SAW . . . $84.50 and NEW B&D 9″ SAW . . . $114.50.

Both Heavy-Duty Units with All the Features Described Above.

features . . . and the
SAWS GIVE THEM TO YOU!


WE DID IT!
YOU ASKED FOR "a handle I can grab onto!"
YOU ASKED FOR "more power for tough jobs!"
WE DID IT!
WE DID IT!
YOU ASKED FOR "safe guard retracting!"
YOU ASKED FOR "quick, steady settings, fast adjustments!"
WE DID IT!
YOU ASKED FOR "a saw that stays steady!"
WE DID IT!
B&D

We've talked to plenty of you who use saws . . . and you've told us plenty about the features you want in saws. Lots of those features were already *in* Black & Decker Saws. Some of them weren't. Now, in the completely *new* B&D Saws, *all* of these features are in . . . and then some!

NOW PROVE IT YOURSELF
and get a chance to win $1,000.00

AT YOUR DEALER'S! See and try the great new Black & Decker Saws yourself *soon* . . . AND GET A CHANCE TO WIN $1000.00 at the same time! Just ask your dealer to show you the new B&D Saws. Try them. Note their many features. Then fill out official entry blank, and leave it with your dealer. He'll do the rest . . . and you'll be in line for the grand prize . . . $1000.00 . . . or one of 52 other awards. See your dealer quick! For dealer nearest you, see Where-To-Buy-It Section of local phone book, under TOOLS-ELECTRIC.

Black & Decker UTILITY PORTABLE ELECTRIC TOOLS

CLASSIFIED TELEPHONE DIRECTORY — TELLS WHERE TO BUY IT

See TOOLS, ELECTRIC

RIGHT ON THE JOB! To make the big B&D Saw Contest even easier for you to enter, we'll arrange to have the new B&D Saws brought right out to your job site, let you try them yourself, enter right then and there. To arrange this, just fill out coupon and mail it *today!*

THE BLACK & DECKER MFG. CO., Dept. 630, Towson 4, Md.

I want to see and try the new B&D Saws right on my job! No obligation, of course!

Name .....

Company .....

Address .....

City ..... Zone ..... State .....

Job Location .....

Film Portrays Big Equipment Accidents

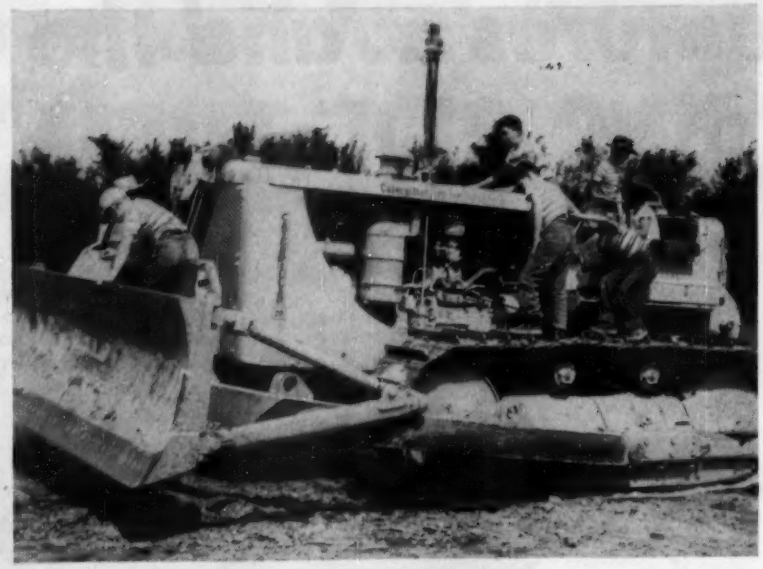
HERE ARE SOME of the most common accidents pertaining to heavy equipment operation—every one of them the result of senseless carelessness—as revealed in a safety film called "The Gamblers" just released by Caterpillar Tractor Co. Based on the theme that Russian roulette is a sucker's bet, and likewise taking chances with heavy equipment, because the gambler has everything to lose and nothing to win, the picture is just about the finest construction safety message ever portrayed on film.

The picture was produced for Caterpillar by the Calvin Company, Kansas City, Mo., at the suggestion of the Construction Section, National Safety Council. Wm. G. Hawkins, insurance manager and safety director of Winston Bros. Co., Minneapolis contractors, headed a Construction Section committee cooperating in production of the picture.

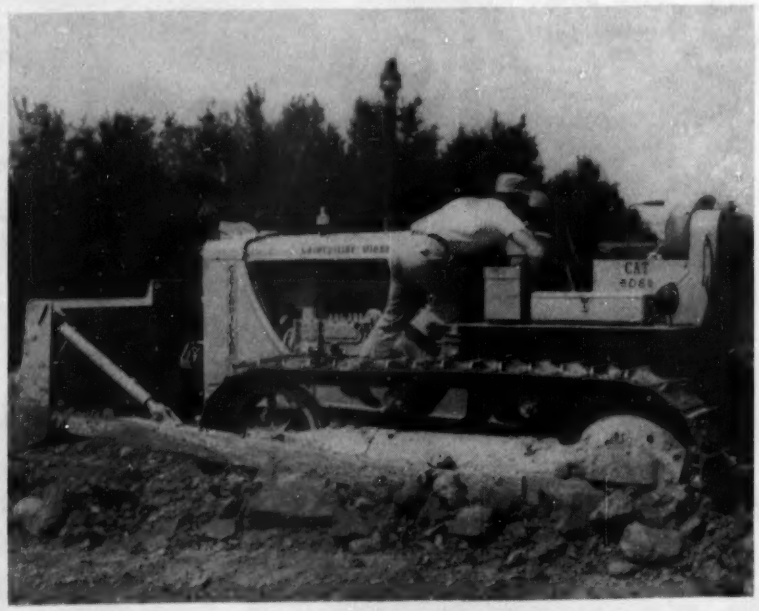
Hard-Hitting

The 20-min. film, in color, is strictly non-commercial. It spurns the usual how-to-do-it safety approach to equipment operation. Instead, it documents many typical every-day incidents on any construction job where an operator may get careless. With smashing impact, the picture shows how easily accidents happen, often with fatal results, because of carelessness. The accompanying pictures are scenes taken from the films but the movie goes on to show what happened.

The film got an enthusiastic reception at its premiere showing before the Construction Section meeting at the National Safety Congress in Chicago last October. It is now available without charge through all Caterpillar distributors, who will make arrangements for showing it wherever desired. Every construction man should see it. It's terrific!



MOST DIABOLICAL of all careless acts is leaving a bulldozer blade hanging on the PCU instead of resting on the ground. These kids fooled around until they found the PCU brake—just as a youngster was crawling under the blade.



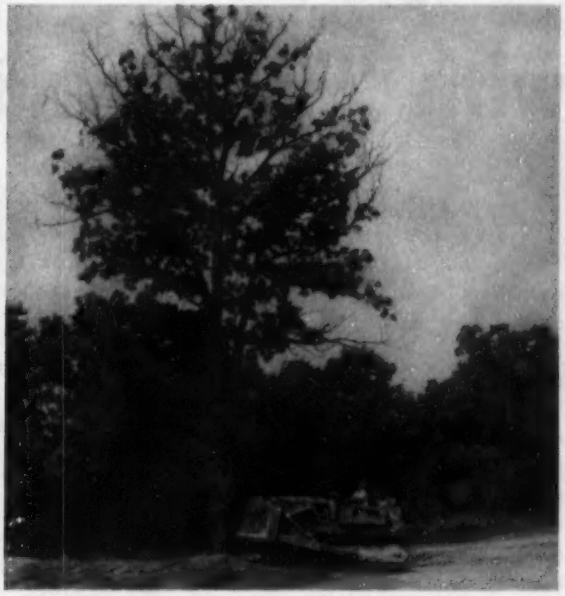
HOW FOOLISH can you get? Not much more foolish than this operator who jumped upon the tracks of an idling tractor, tripped and grabbed the clutch in a desperate move. He lost both feet in the tracks as the machine moved ahead.

IF YOU WANT TO RACE, get yourself a horse or a sport car. Heavy rigs like these aren't meant for racing, though some jockey operators seem to think so. This is a sucker's bet.

JUST INVITING a disaster is this chap filling the starting engine tank with gas while smoking a cigaret. The invitation was a success.

GOOD HOUSEKEEPING keeps operators out of the hospital, but a messy deck can jam up the controls or trip up the operator.

ADJUSTING the front cable control of a bulldozer with the engine running can prove fatal. All it takes is a wrench to get jammed in the running pulley.



THIS BULLDOZER OPERATOR is playing it smart to scan the tree for dead limbs before trying to knock it over. A big dead limb packs a terrific wallop.

More photos on page 78

DRAINING THE AIR BRAKE supply tanks at end of day is a good idea. But don't forget to close the drain petcock in the morning, or you won't have any brakes. And here's some possible horrible results.

7 jobs...165,000 yds. *in 16 weeks* with 2 D Tournapulls

After half a season of dirtmoving with 2 D Tournapulls, W. E. Oyler Construction Co. of Canton, Ohio, have found they're saving time and trouble plus moving dirt at a cost which gives them a big bidding and profit advantage over competition. With fast job-to-job moves over city streets and highways, their "D's" handled 7 jobs and moved nearly 165,000 yards in their first 16 weeks of operation. Including travel time, 7-yd. dirtmovers averaged 1730 pay yards per working day. Here's the schedule:

7 jobs in 95 working days

On initial assignment, the "D's" drove 54 miles in 2 hours from Cleveland to Canton to excavate streets, fill swamp, and grade building sites for Shrine housing development. By completing much of the work in the first 3 weeks, Oyler was able to pull the versatile units off the job to fill several other small contracts.

First, they traveled to Mansfield to level a shopping center site. Next, they drove at speeds to 28 mph to a drive-in theater job in Newark, O.

Returning to Canton, the 2 machines handled a church and school assignment in only 14 days . . . then moved a combined total of 19,600 yards on 3 jobs in 3 weeks in suburban Canton. Finally, the "D's" returned to the Shrine housing project which they wound up in 3 more weeks of high-speed dirtmoving.

150 yards hourly on 2000′ hauls

In typical production on Shrine job, the Tournapulls were push-loaded by 93 hp crawler-tractor with 5½ to 6 pay yards of wet topsoil, sand, and gravel in less than 20 seconds. Long 4000′ cycle with slippery grades up to 10% took only 4 minutes. Completing 13 round trips every 50-minute hour, each unit moved 75 pay yards. When conditions were dry, each "D" made 17 trips hourly for a unit output of about 100 pay yards.

Owner W. E. Oyler, Jr., reports that two 148 hp crawlers with 15-yd. LP pans started the job with the "D's" but were quickly hauled off the job because the Tournapulls moved dirt much cheaper. Figures show that the slow-moving crawlers averaged 9¼ minutes on 4000′ cycles. The 28 mph, rubber-tired "D's" completed the same cycle in 3 minutes.

"Moves ⅓ more dirt than crawler"

"The D Roadster will move ⅓ more dirt than a 148 hp crawler with 12-yard pan on all hauls from 500′ up," says Mr. Oyler. "And they're almost 100% efficient! In almost 800 machine hours, our downtime on both machines averaged only 3 hours."

Increase your earnings

Ability to deliver more yards per hour . . . and to handle small, as well as large, scattered jobs profitably is the reason why successful dirtmovers everywhere are turning to high-speed electric-control D Tournapulls. Ask your LeTourneau-Westinghouse Distributor to show you what these rubber-tired "D's" can do on *your* job.

RUBBER-TIRED DIRTMOVING AT LOWEST-NET-COST-PER-YARD

W. E. OYLER CONSTRUCTION COMPANY

3405 Blackburn Rd. Canton, Ohio

D TOURNAPULL JOB SCHEDULE

Job and Location	Type of Work	Yards Moved	No. of Work Days	Miles job-to-job
Shrine housing development Canton, Ohio	Grading, excavating streets, land reclaiming, and swamp-filling	70,000	36	54
Shopping center Mansfield, Ohio	Grading, excavating basements	30,000	18	63
Drive-in theater Newark, Ohio	Precision grading	17,000	12	51
Church-school at Canton	Grading building sites, roads, preparing parking areas	27,700	14	102
Housing site, North Canton	Grading	6,800	6	Mileage figures in city were not kept, but 28 mph "D's" easily moved along streets with no pavement damage or traffic tie-ups
Ridgedale housing allotment near Canton	Filling swamp	4,300	4	
Industrial plant sites, southeast Canton	Grading	8,500	8	
	TOTALS	**164,300 yds.**	**98 days**	**270 miles**

Tournapull—Trademark Reg. U.S. Pat. Off. DP-462-B

LeTourneau-Westinghouse Company

PEORIA, ILLINOIS

Pusher-assisted, 122 hp Tournapull picks up 5½ to 6 pay yards over short 20' distance. Second "D" is climbing 5% grade to position for next load.

On 2000' haul to swamp fill, "D" moves down 5% grade for 300', averages 13 mph for the round trip. Big low-pressure tires give good traction on wet haul road, absorb shocks of rough ground.

Electric-control Tournapull spreads load quickly in 20'. With instant power steer, machine makes 90° turns within 12'8" radius, works easily in cramped areas.

"NO MORE LUBRICATION TROUBLES"

—says STEPHENS-ADAMSON MFG. CO.
Conveyor Mfr., Aurora, Ill.

"LUBRIPLATE Lubricants satisfy the 'one-shot' requirements of our conveyor idlers. LUBRIPLATE effectively lubricates each bearing in turn and flows through the hollow shaft to the next bearing. We do not know of a single case of bearing trouble through faulty lubrication where LUBRIPLATE has been used."

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE GREASE AND FLUID TYPE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE COSTS.

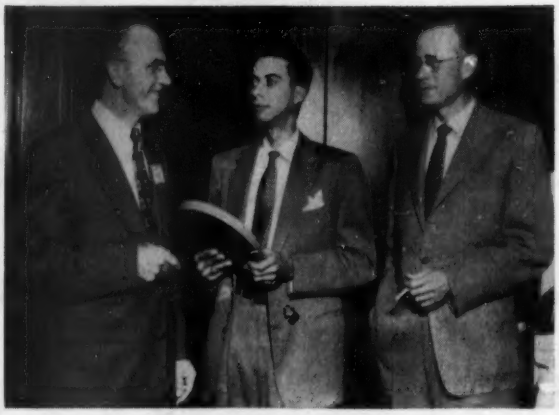
LUBRIPLATE is available in grease and fluid densities for every purpose... LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.

For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK"... a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.

STEPPING OVER A CABLE instead of going around might save you a few seconds, but should the line be tightened at the right moment, you're apt to be incapacitated for life.

HITCH-HIKING is dangerous any place, but standing on the coupler bar of a bouncing tractor hauling a big scraper is near suicide, for if you should slip off . . .

← LUNCH-HOUR SIESTAS are all right if taken somewhere else besides in the shade of heavy equipment, for the operator might not notice you're still asleep. That's a sucker's bet for sure.



→ THESE THREE are largely responsible for production of "The Gamblers." William G. Hawkins, Construction Section, National Safety Council; Dean Blomeyer, head of film production for Caterpillar Tractor Co.; and Dick Bulkeley, who directed the film for Calvin Co.

IMPOSSIBLE WITHOUT EXPLOSIVES

120 million tons of iron ore, it is estimated, were mined in open pits and underground operations last year. This photograph shows some of the highly mechanized operations which make such huge production possible.

But before the ore can be dug, millions of pounds of explosives are used to break it loose from working faces, to assure easy shovel digging and rapid transportation of the ore to the crushing and washing plants.

The manufacture of explosives and the knowledge of their efficient and economical use have been Hercules business for 40 years. During this time we have studied the varying conditions under which explosives are used and have pioneered in developing the right types of explosives for industrial needs. Hercules explosives and services assure economical and efficient blasting not only in metal mining, but in coal mining, quarrying, construction—in fact, wherever explosives are used.

HERCULES POWDER COMPANY
INCORPORATED

Explosives Department, 974 King St., Wilmington 99, Del.

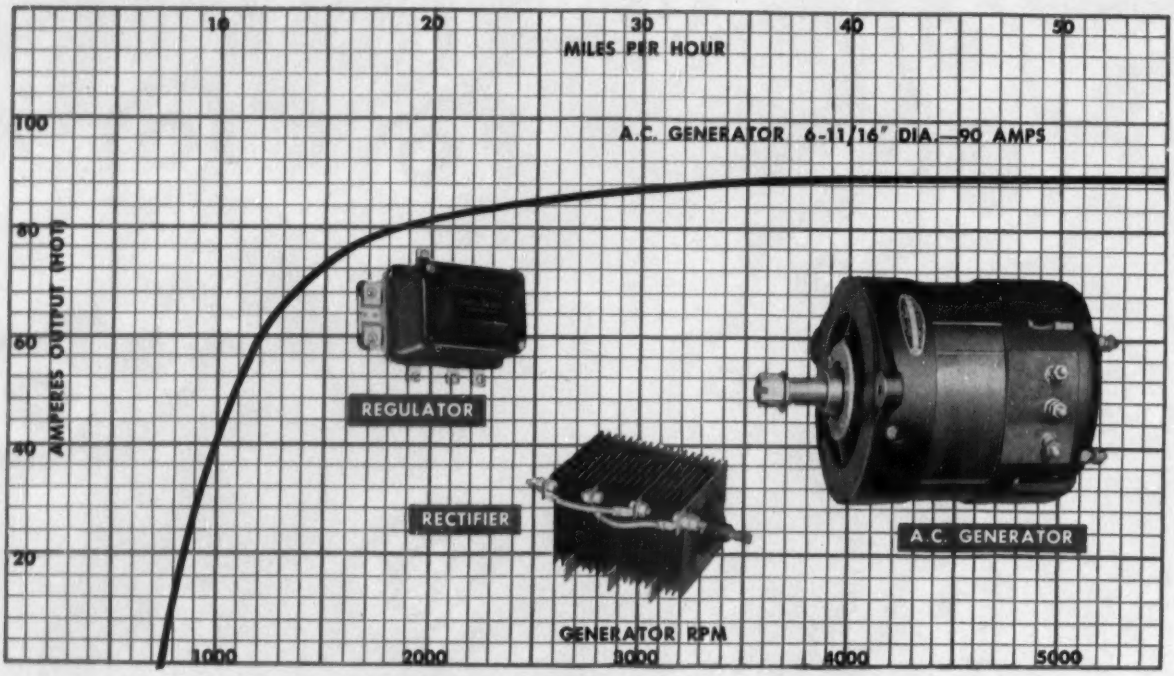
Birmingham, Ala.; Chicago, Ill.; Duluth, Minn.; Hazleton, Pa.; Joplin, Mo.; Los Angeles, Cal.; New York, N. Y.; Pittsburgh, Pa.; Salt Lake City, Utah; San Francisco, Cal.

(Advertisement)

XR54-1

Power Packed and

HERE'S THE A.C. ANSWER TO EXTRA-HEAVY ELECTRICAL DEMANDS



DELCO-REMY

A. C. Generator, Regulator and Rectifier

Here's the answer for "problem" vehicles—Delco-Remy's new long-lived A.C.-D.C. charging system! It's specifically designed to meet the *extra*-heavy electrical demands of contractors' trucks and other vehicles equipped with two-way radio, floodlights or any extra electrical units . . . ample current reserve picks up discharged battery quickly in operation. Delco-Remy A.C. generators are suitable for use at all engine speeds.

With output ranging from 30-40 amperes at curb idle and up to 90 amperes at higher engine speeds, the new Delco-Remy A.C.-D.C. charging system meets all electrical needs under the toughest operating conditions. Included in the new system is the A.C. generator, a matching regulator, and a rugged, dependable dry-plate rectifier which converts generator A.C. output to direct current.

Application packages complete with installation instruction sheets for popular makes of cars and trucks are now available. The conversion job is simple. For further details and application data, see your nearest United Motors distributor.

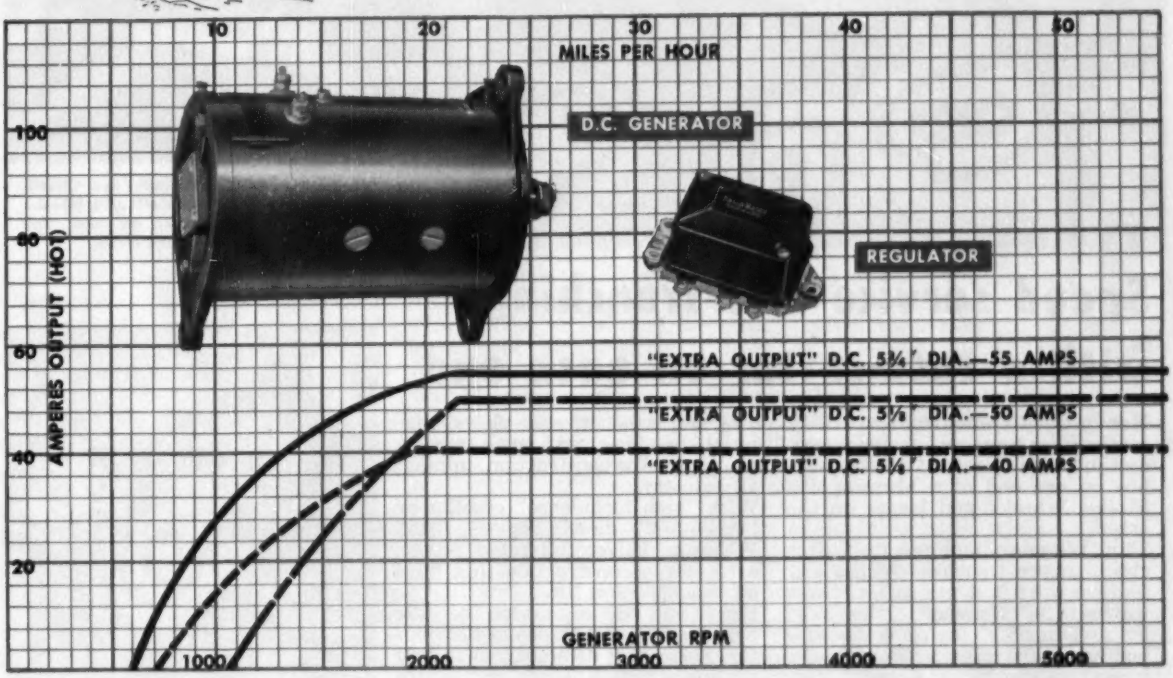
A GENERAL MOTORS PRODUCT — A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE

WHEREVER WHEELS TURN OR PROPELLERS SPIN

Right for the Job

HERE'S THE D.C. ANSWER TO HEAVY ELECTRICAL DEMANDS



DELCO-REMY

Extra-Output D. C. Generators and Matching Regulators

Delco-Remy extra-output D.C. generators are an economical answer to the electrical needs of contractors' pickup or panel trucks as well as other vehicles with additional lights, two-way radios, or other special electrical equipment in medium to heavy-duty service. Delco-Remy extra-output D.C. generators are low in cost, simple to install, economical to maintain.

DELCO-REMY 40-AMP GENERATOR has low cut-in, about 7 mph, charges from 11 to 17 amperes at curb idle . . . full output about 18 mph —for vehicles customarily used in heavy traffic.

DELCO-REMY 50-AMP GENERATOR has slightly higher cut-in, about 11 mph . . . full output about 21 mph—for vehicles customarily operated at higher speeds, with minimum slow driving.

DELCO-REMY 55-AMP GENERATOR has very low cut-in, about 6 mph; charges at curb idle from 20 to 30 amperes . . . attains full output at 20 to 25 mph—for vehicles customarily operated at low speeds with added electrical loads, such as contractors' field cars.

For further details and application data, see your nearest United Motors distributor.

Delco-Remy

DIVISION, GENERAL MOTORS CORPORATION, ANDERSON, INDIANA

WHEREVER WHEELS TURN OR PROPELLERS SPIN

Service lines go in fast with the new Ottawa backhoe on one end of the MM UTIL Wheeler and heavy-duty loader on the other. Unit trenches, loads, backfills and levels.

Speed service-line trenching with a cost-cutter on each end

Heavy-duty trenching for utility service lines becomes a faster, lower-cost job with this new Ottawa backhoe on one end of a Minneapolis-Moline Wheeler and loader on the other.

This Wheeler backhoe unit digs clean, square trenches, ditches and footings to a 9 ft. depth, offers bucket widths to 36″. Backhoe reaches 15′4″ for digging, 8′3″ for dumping into highest trucks. Loader backfills and levels to complete the job with cost-cutting speed.

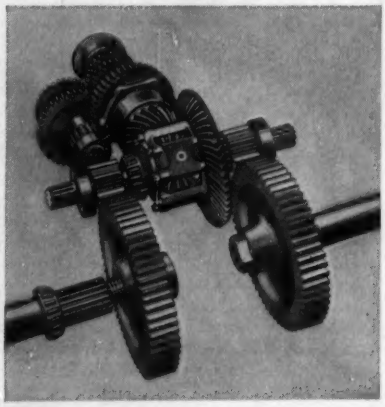
A complete line of unitized attachments makes full use of extra Wheeler power, greater Wheeler torque at moderate engine speed. Attachments include forks for loading and hauling, lifting cranes, excavating and loading buckets, dozer blades, scrapers, winches, snowplows, material handling and maintenance equipment for construction, mining, all industry.

With "high turbulence" gasoline or "turbo-cell" diesel engines, MM Wheelers deliver full-rated power, extra-heavy construction that pays off in longer unit life.

Before you buy any loader, see your Minneapolis-Moline dealer-distributor. Have him demonstrate to you that low-cost Wheelers will *return* your money *sooner*, *pay* you *longer*.

MINNEAPOLIS-MOLINE

MINNEAPOLIS 1, MINNESOTA

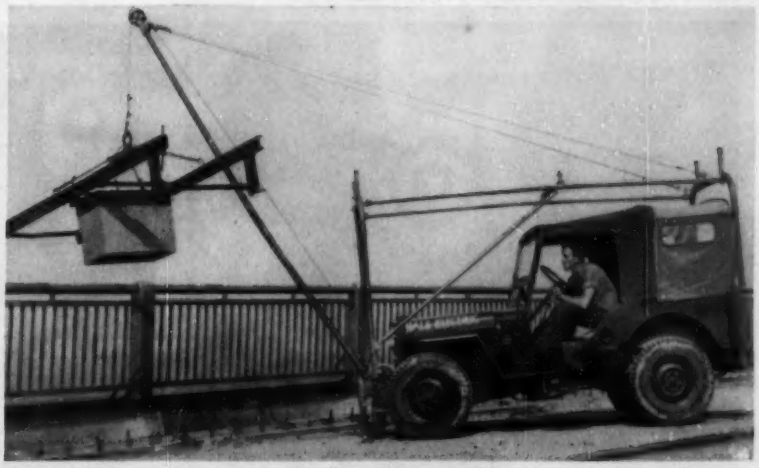


UTIL Wheelers pay you in longer tractor life with heavier construction, live rear axles 3 inches in diameter, bull gear final drive, greater bearing surfaces. Transmission and differential operate in a constant oil bath.

Mowing around job sites, along highways, in plant yards is a low-cost operation with this flexible hydraulic drive mower mounted on the 30 hp. RTI Wheeler.

This Wheeler and hydraulically-controlled scraper offer leveling accuracy in a low-cost package. Heavy-duty 3-point hitch controls scraping depth, provides rigid mounting.

Jeep-Powered Equipment Can Do Many Jobs At Low Cost



PIPE-BOOM CRANE with front jacks under Jeep frame handles numerous lifting jobs. Same vehicle can carry air compressor or a welding outfit for increased utility with mobility.

Information and photos from Lincoln Electric Co.

AGILE AND VERSATILE as ever, the Willys Jeep is being made even more useful for contractors by a dealer, Parsons Willys Sales and Service, Washington, Pa.

Parsons cultivates contractor customers—not only does he sell them Jeeps, but also furnishes and installs almost any construction equipment the little wagons can carry and operate out in the field. He stocks parts and services both the vehicle and its special equipment.

Especially useful on many construction projects is a portable welder. Parsons puts a Lincoln 200-amp generator, driven by V-belts, on a Jeep and adds an oversize exciter to provide night lighting when required. Gas bottles also can be carried and the other equipment to make almost all types of welding practical—even shielded arc. This same Jeep can be fitted with a winch and hoist to handle some of the heavier parts and materials met on the average job.

Another handy adaptation mounts a 60-cfm air compressor and receiver tank. Suitable drills, jackhammers and tampers or pneumatic power tools can be included. This Jeep can mount a dozer blade, controlled hydraulically, for backfilling and light earthmoving.

A backhoe attachment can be mounted on the rear and operated

WELDED-PIPE TRIPOD is quickly detachable hoist frame for low lifts with cable reeled on winch below. Jeep power take-off does the hard work. Jeep also carries compressor and hose reel.

BACKHOE mounted on rear operates through hydraulic power. Stabilizing foot under rear frame supports hoe when digging.

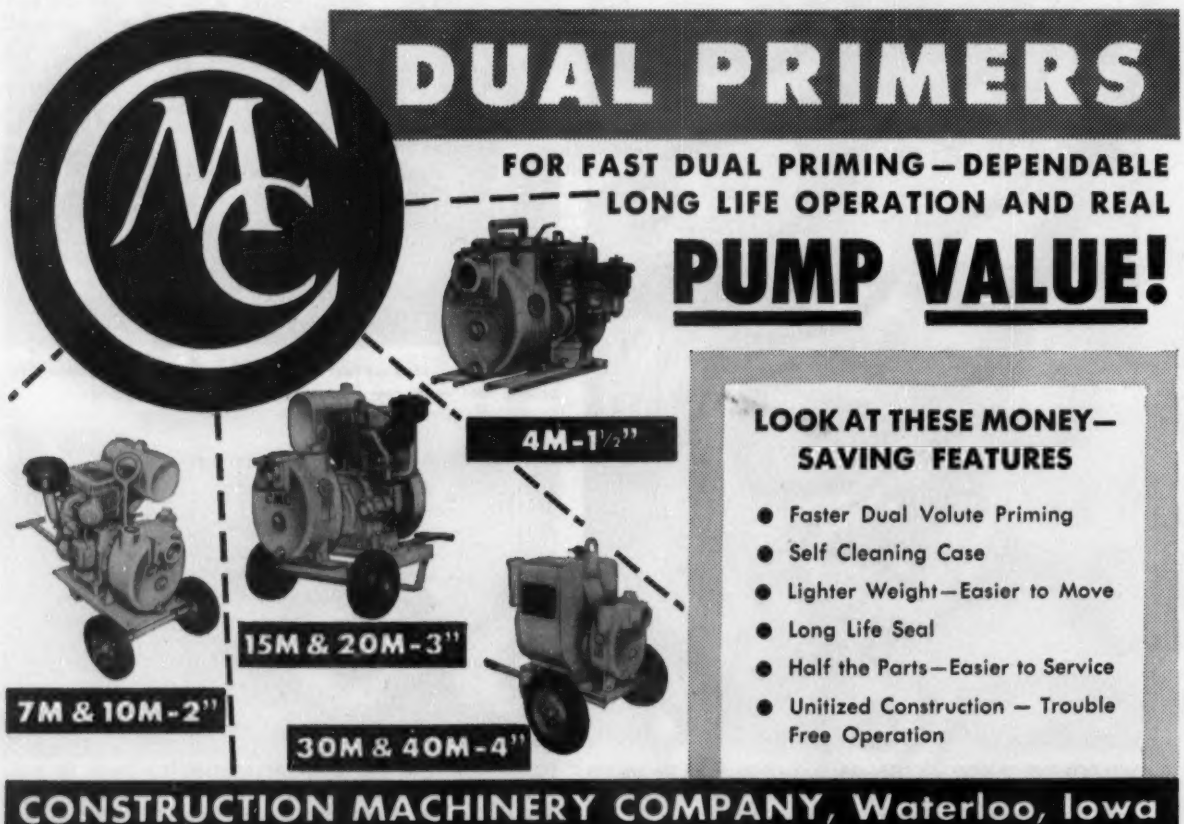
TOOTHED CHAIN TRENCHER ATTACHMENT is handy for many small and confined ditching jobs. Cuts 8 to 16 in. wide, 5 ft deep. Augers move dirt to side; dozer blade is handy for backfilling.

GRADER ON REAR can do scooping and scarifying. Useful for roads, driveways and many smaller grading jobs. Mounting on Jeep is three-point for easy installation or replacement.

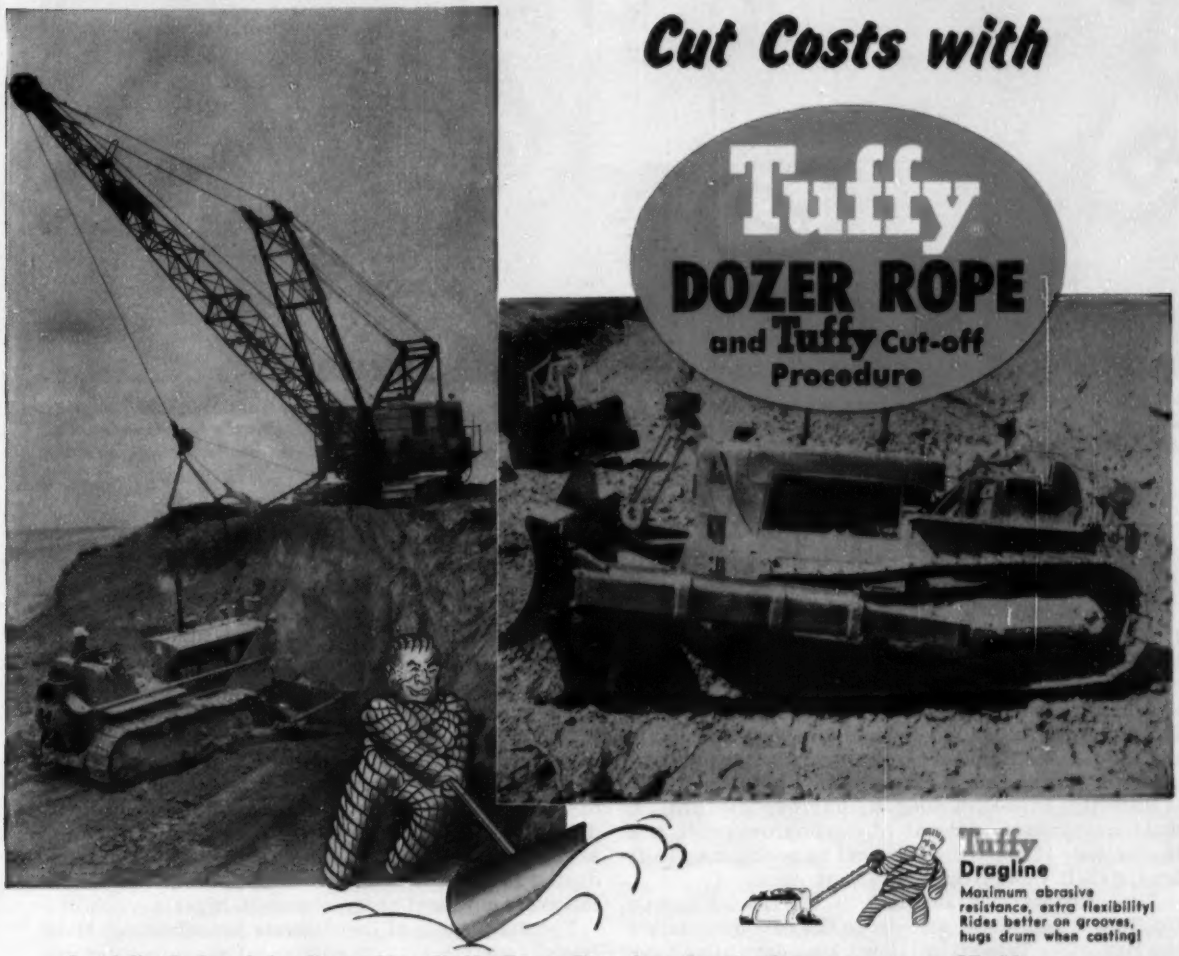
MOBILE WELDER is Jeep with 200-amp Lincoln generator and arc welding equipment. Gas bottles can be carried, and power take-off also operates generator for night lighting in the field.

hydraulically. A toothed chain is the business end of a trencher cutting from 8 to 16 in. wide and 5 ft. deep. Transverse screws move the earth to each side of the trench. The Jeep carrying the trencher on the rear can mount a dozer blade up front for backfilling, and the vehicle can be driven over the fill to roll-tamp the trench.

Another option is a vertical auger on the rear for digging pole holes, driven from the power take-off through bevel gearing. More unusual is a Fresno-type scraper-grader that attaches to the rear. It incorporates scarifier teeth for added utility.



Use Dozer Rope You Now Throw Away!



Cut Costs with

Tuffy DOZER ROPE and Tuffy Cut-off Procedure

Specially designed for Dozer Use, Tuffy Dozer Rope has the stamina needed to keep on handling the blade long after ordinary ropes are worn out!

Mounted Back of The Wedge Socket, a 150′ reel of ½″ or 9/16″ Tuffy Dozer Rope can give greatly increased service! Here's how: When rope is cut or crushed on the drum you feed through just enough to replace the damaged part—save the 40′ to 50′ you now throw away!

In Half The Time normally needed for replacement, your Dozer is back on the job! Remember, you needn't replace the whole rope. Just feed enough from the reel to replace the part that's damaged. Users report down-time reduced considerably when they install Tuffy!

Combine this built-in strength of Tuffy with the savings offered by the Tuffy Reel Mounting and Tuffy Cut-off Procedure and you'll see why more and more construction men are switching to Tuffy! Try Tuffy Dozer Rope—and *save* the difference!

Tuffy Dragline
Maximum abrasive resistance, extra flexibility! Rides better on grooves, hugs drum when casting!

Tuffy Slings
It's next to impossible to materially damage the 9-part machine-braided wire fabric construction of Tuffy Slings by kinking. For longer service with safety, buy Tuffy.

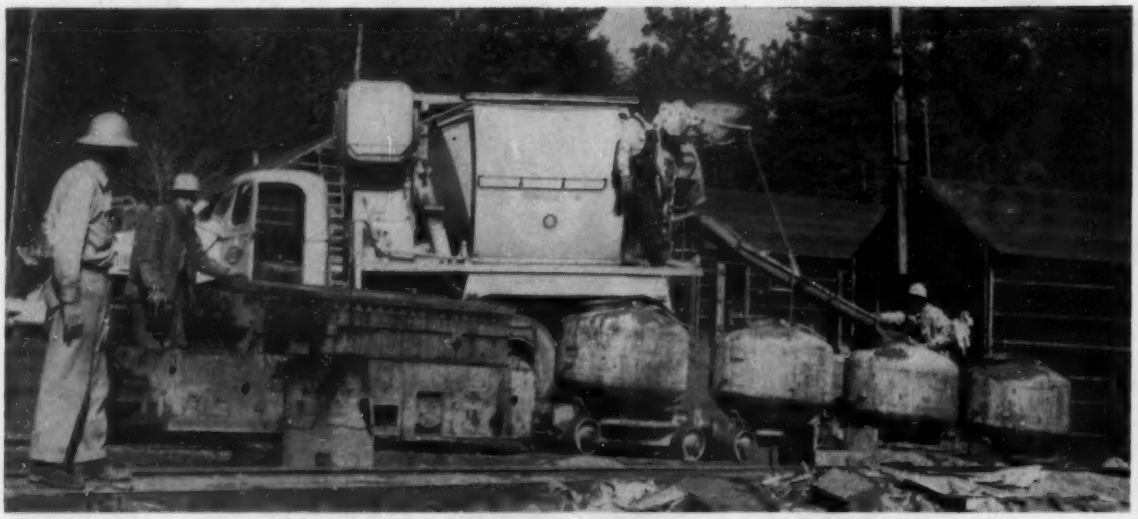
Tuffy Hoist Line
Designed especially for hoist line use on cranes, clamshells and derricks. Flexible and tough.

Tuffy Scraper Rope
Flexible enough to withstand sharp bends . . . stiff enough to resist looping and kinking when slack! Moves more yardage.

union Wire Rope corporation

2270 Manchester Ave. • Kansas City 26, Mo.

Specialists in High Carbon Wire, Wire Rope and Braided Wire Fabric



FLOCRETE PLACERS of 1¼-cu yd capacity—8 in all—but used in a 4-unit train, transported the concrete into the tunnel. Here is a unit being charged from a Rex transit mixer near the outlet portal of the Hendricks Tunnel. The concrete placing equipment was leased by Morrison-Knudsen Co., Inc., from Flocrete Manufacturing Co., of Los Angeles, Calif.

Concrete "Pot-Shots" Line Difficult Tunnel

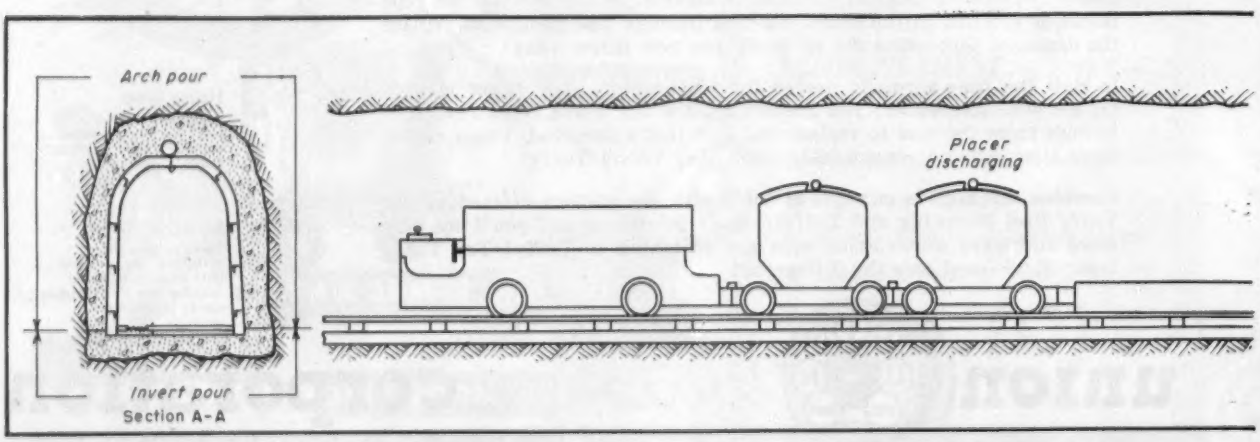
IN THE GOLD RUSH DAYS a group of Californians built a 19-mi system of canals and flumes in the High Sierras near Paradise, Calif., to carry water for the hydraulic mining of gold. The gold didn't last long, but the canal system has remained in service, helping to produce electric power by carrying water to a reservoir of Pacific Gas & Electric Co.

Recently, PG&E decided to improve the historic waterway system, and one of the improvements was to eliminate 12 mi of the old canal by boring a 4,630-ft long, 6x7-ft tunnel through a mountain.

The contract was awarded to Morrison-Knudsen Co., Inc., Boise, Idaho, who drove the new bore, called the Hendricks Tunnel, in 175 working days after having encountered considerable difficulties in the unstable formations which consisted chiefly of tuff-brecia and conglomerates of cemented sand, small rock and gravel. The unstable condition of the ground necessitated the use of tunnel supports throughout the entire length of the tunnel.

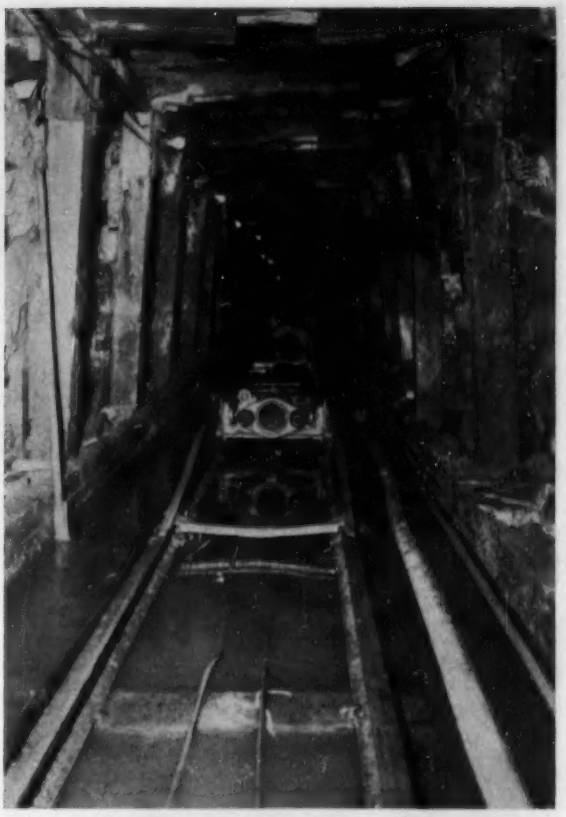
The supports were square sets fabricated from 8x8-in. timber and spaced at 5- to 6-ft centers according to the condition of the ground. To add to the difficulty of the driving operations, a considerable number of underground springs was encountered which produced an aggregate flow of approximately 3,000 gpm at the portal with some of the individual springs producing as much as 400 gpm. Despite these difficulties the average rate of progress was 26 ft per day.

For the placing of the concrete tunnel lining, M-K leased concrete-placing equipment manufactured by the Flocrete Manufacturing Co. of Los Angeles. This equipment consisted of eight 1¼-cu yd Flocrete Placers, an elevated section of movable track termed a



POUR OF FLATTENED ARCH is done with pneumatic placers powered by air receiver inside tunnel. Ingenious pass-over track stores empty

CONCRETE-FILLED "POT" coupled to a high-pressure air line forced the concrete into a 6-in. dia pipe. The pipe shoots the concrete around the form which shapes the actual lining.



THIS "PASS-OVER" is an elevated section of movable track used to switch and store empty placers. The ramp is extended and retracted by means of two hydraulic cylinders on underpass.

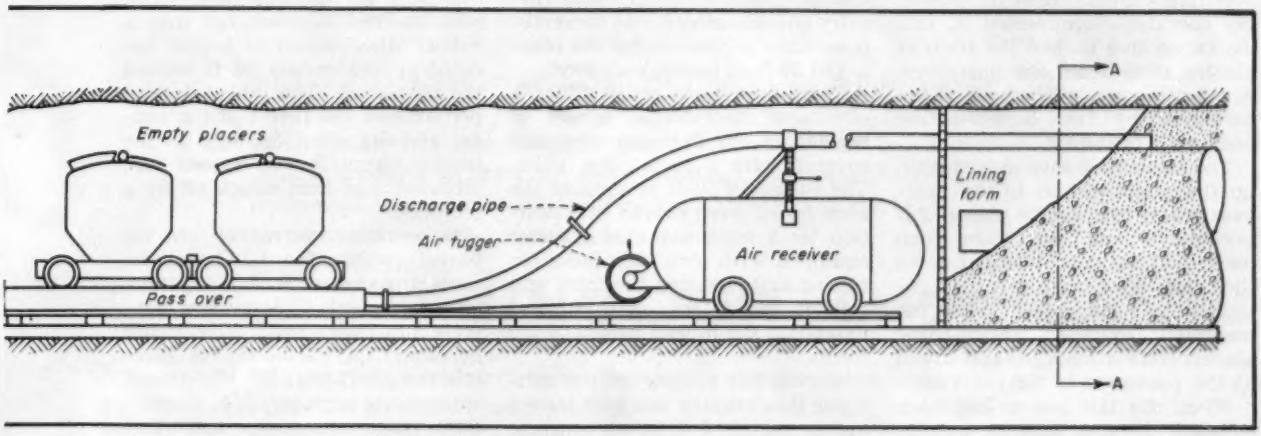
"pass-over" which is used to switch and store empty placers, an air receiver and enough 6-in. discharge pipe to extend through the pass-over, over the air receiver and for some 150 ft into the space above the lining forms.

The unusual feature of the Flocrete method is the Flocrete Placer which serves as both a vessel in which to transport the concrete and as a placer from which the concrete can be placed directly through the discharge pipe and into the space behind lining forms.

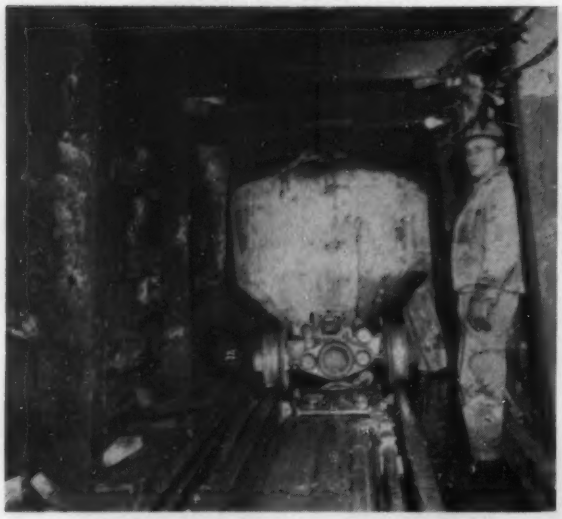
Inasmuch as the placer is used to transport and place the concrete, the costly installation of a conveyor to charge the placement equipment is eliminated. A patented turnip-shaped air valve, located in the valve chamber at the base of the placer, is used by the operator to control the rate of concrete discharge to conform to conditions encountered behind the lining forms.

On the Hendricks Tunnel, the four 1¼-cu yd Flocrete Placers comprising a train were charged with concrete from Challenge and Rex transit mixers at the tunnel portal and hauled to a siding at the midpoint of the tunnel. As the train of empty placers passed the siding on its way to the portal the train of charged placers proceeded to the side of the concreting operations.

As the train approached the pass-over, the first placer was connected to the 6-in. discharge pipe and the air supply lines by quick-acting couplings mounted on the pass-over. Then the operator opened the outlet valve and began discharging concrete from the

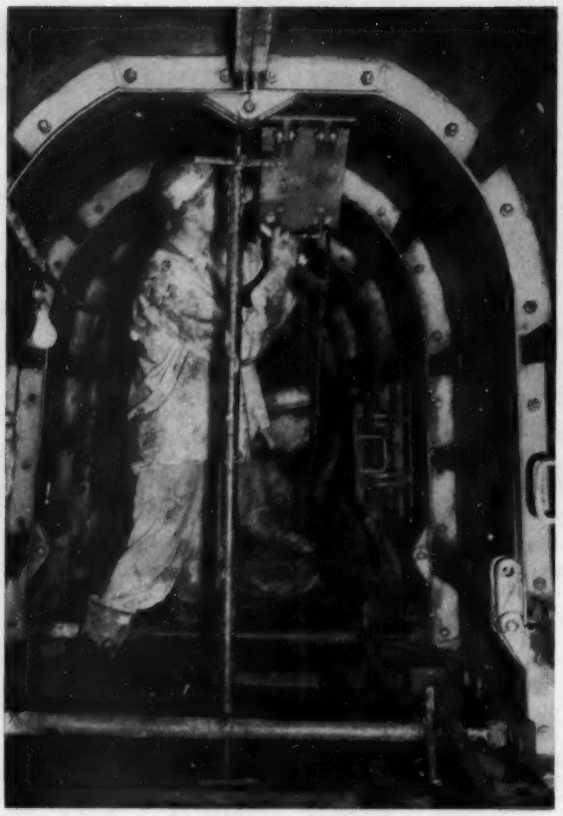


placer cars while a loaded car is being discharged. Train of four 1¼-yd Flocrete Placers was charged outside tunnel by transit mixers.



LOCOMOTIVE MOVED THE TRAIN up the ramp and on to the pass-over where the empty placer was uncoupled and the train backed off the pass-over and back down on the ramp.

←HERE THE RAMP has been retracted into the pass-over. Two empty placers can be seen stored. When the last placer had been emptied, it was coupled to other placers and hauled out of the tunnel for recharging with concrete.



TUNNELMAN is peering through opening to check flow of concrete around the steel lining form. The lining required a total of 9,000 cu yd of concrete. The form was 90 ft long.

placer into the tunnel arch forms.

With the emptying of the placer, the operator disconnected it, and the locomotive backed the train of placers away from the pass-over. A rail ramp was pushed out of the pass-over by two double-acting pneumatic cylinders.

The locomotive then moved train up the ramp and on to the pass-over where the empty placer was uncoupled, and the train then backed off the pass-over and down the ramp. The ramp was then retracted into the pass-over by the pneumatic cylinders. Succeeding placers were discharged and stored on the pass-over in the same way.

When the last placer had been emptied, it was pushed up the ramp, coupled to the other empties and hauled out of the tunnel for reloading.

As the forms were filled, all of the placing equipment, including the discharge pipe, moving as a unit, was slowly backed away from the forms by the use of an air tugger mounted on the air receiver.

The collapsible steel forms used for the lining of the finished tunnel were designed by Bill Schutte and fabricated in 5-ft sections by the Century Metals Co. of Los Angeles and assembled into three 30-ft sections to provide for the placing of 90 ft of tunnel each day.

The lining form consisted of a structural steel frame, hinged at the top of the flattened arch and covered with a ¼-in. skin plate. The collapsed 30-ft sections of the arch forms were moved into position by a track-mounted traveler equipped with hydraulic jacks for raising and lowering the form and ratchet jacks for collapsing and extending the hinged panels of the forms.

During the placing of the concrete, the slick line was kept buried approximately 5 ft in the concrete to insure the packing of the arch and the complete encasement of tunnel supports. Approximately 120 cu yd of concrete, placed at the average rate of 16 cu yd per hr, were required to complete the 90-ft section of tunnel walls and arch completed each day.

Flocrete pneumatic concrete placing equipment, with modifications, also was used to place the tunnel invert. The discharge pipe, instead of being elevated as was necessary for the arch and walls, was lowered to discharge into a rubber wheel-mounted hopper located approximately 60 ft behind the pass-over. The wheeled hopper rode on the invert of the tunnel and deposited concrete on the invert where it was spread out, vibrated, and then struck off by a template.

Supervisory personnel on the tunnel were: H. L. Leventon, project manager; E. J. Fitzgerald, superintendent; C. Jerry Fox, concrete superintendent. Supervisory personnel for Pacific Gas & Electric included John W. Woodward, supervising engineer; J. E. Cooney, field superintendent; and Roy Friedicks, resident engineer.

"We solved this problem by eliminating 5 different oils"

Here is the case of a large Pennsylvania contractor, so thoroughly mechanized that even his wheel-barrows were gasoline powered. And strangely enough, this intense mechanization was the root of the company's problem. Too many different types of oil were resulting in confusion and *misapplication*.

On one of his periodic visits, Sinclair Lubrication Engineer Harry Donovan was asked for his recommendations. Mr. Donovan reports, "It was plain that the perfect solution would be *one oil* suitable for heavy duty diesel, medium duty gasoline and light duty air-cooled engines.

Mr. Donovan continues, "I suggested SUPER TENOL®, knowing from previous experience that it would offer maximum protection against cold engine sludge in the lighter operations . . . and provide the necessary film strength and anti-oxidant qualities needed in the heavy duty diesel operations. The company accepted my recommendation and *eliminated 5 different oils*. Moreover, SUPER TENOL has prevented any further confusion or misapplication of oil."

SINCLAIR LUBRICANTS

Why not give a Sinclair Lubrication Engineer the chance to help solve your lubrication problems. *There's no obligation.* Contact your local Sinclair office or write Sinclair Refining Company, 600 Fifth Avenue, New York 20, N. Y.

"WHAT AM I BID?"

3-Day Auction at Boston Moves 473 Pieces of Equipment

LOOKING FOR BARGAINS in used equipment, contractors and many construction equipment dealers from the East—also looking and doing some selling—were part of a super-colossal, well-ballyhooed 3-day auction held in Boston, Mass. According to the auctioneer, Percy Ross of Ross and Ross, Minneapolis, 473 pieces of earthmoving equipment—some used, some new—were sold to the highest bidder.

The mid-December auction was different in a number of respects.

Its sponsor was the New England Distributor's Association, an association of equipment dealers located in the New England area.

The equipment was on display prior to the auction at the Glacier Stone and Sand Co., located near Norwood, Mass., but the actual auction took place in the spacious main ballroom of the Sheraton Plaza Hotel in Boston.

The sale started promptly each day at 10 o'clock and continued uninterrupted until 5 pm—that is,

(Continued on page 94)

PARTIAL VIEW of the 473 pieces of earthmoving equipment sold at a 3-day public auction in Boston. The equipment was displayed at Norwood, Mass., but the auction took place in the ballroom of Boston's Sheraton Plaza Hotel

how OLD is your shovel?*
if 10 years or more, this new BAY CITY will pay for itself with

1—lower maintenance
2—reduced operating costs
3—increased production
4—greater efficiency
5—fewer repairs
6—less downtime

* crane
clamshell
dragline
hoe

The economic life of a shovel will vary according to make, usage and care. Sometimes it will be 3 years — others 10 or more. But the chances are that if your shovel, crane or dragline is 10 or more years old, it will pay you to replace it with a new BAY CITY.

Here we show the heavy-duty ¾-yard shovel. It has long, wide crawlers, a cast alloy-steel base, tandem drums in ball bearings, helical gears, 517-cu.-in. gas engine, booster clutches, power dipper trip, 19-foot boom, 14-foot straddle-type dipper sticks, rock-type bucket, chain crowd — and many other time and money saving features. Shovel weight approximately 46,500 pounds.

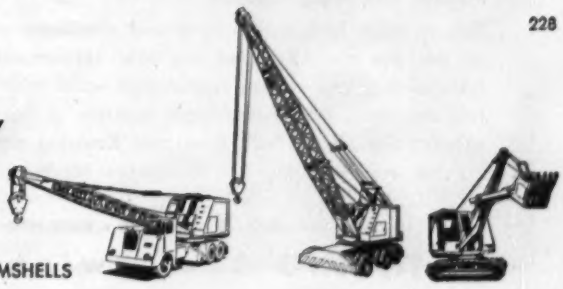
That represents BIG VALUE — why not see your nearest BAY CITY dealer or write direct for catalog.

BAY CITY SHOVELS, INC., Bay City, Michigan

Write for any of these catalogs—crawler machines, ½ yard up; CraneMobiles and CraneWagons of 12½, 20 and 25 ton capacity—they are yours for the asking.

228

BAY CITY



SHOVELS • CRANES • HOES • DRAGLINES • CLAMSHELLS

mobile concrete mix plant on rubber

Koehring 16-E *twinbatch* rides on pneumatic tires . . . works, travels on or off pavement . . . makes self-powered moves at 9 m.p.h. Its rubber-tired mobility increases productive work-time. Its high elevating boom discharges into overhead hoppers . . . pours concrete for buildings, pilings, culverts . . . or batches into trucks. Bucket on 60° elevating boom discharges at a height of 21 feet (higher with special boom). Boom also swings in a 160° arc . . . speeds pouring of floors, footings, highway and airport strips.

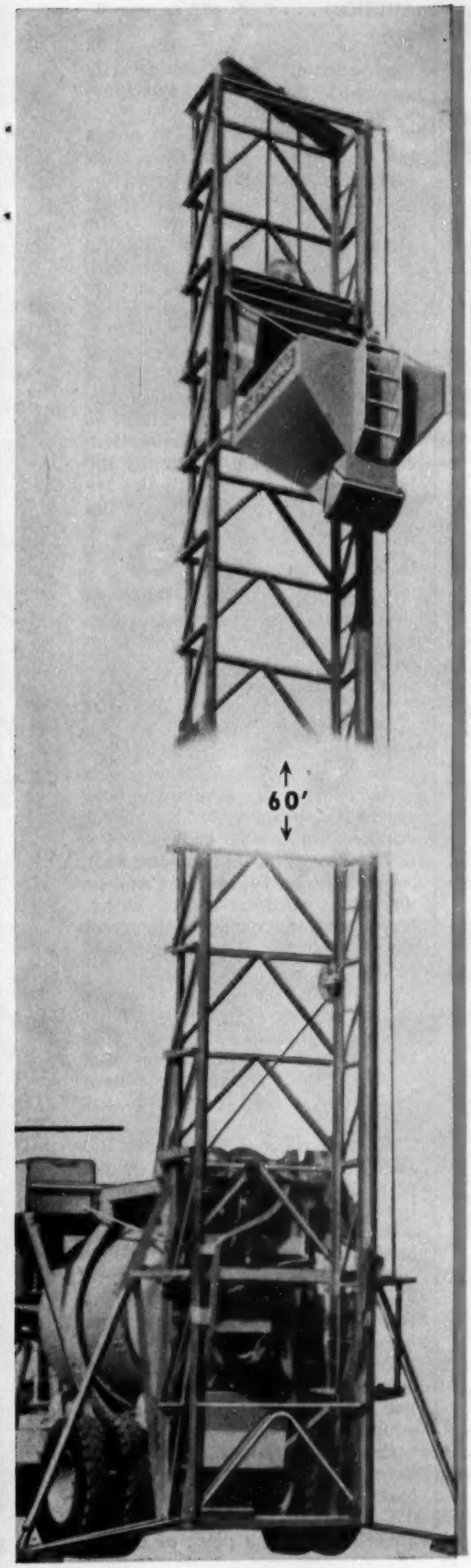
This versatile 16-E easily mixes and distributes over 50 cu. yds. per hour. 7-second skip hoist, split-second Autocycle mixing, and vertical syphon-type water tank all assure consistent, maximum-strength concrete at top mixing speeds. Get all the facts from your Koehring distributor . . . or write *Koehring Co., Milwaukee 16, Wis.*

(Subsidiaries: JOHNSON • PARSONS • KWIK-MIX)

KOEHRING 16-E *twinbatch*®

48½-foot discharge height with tower

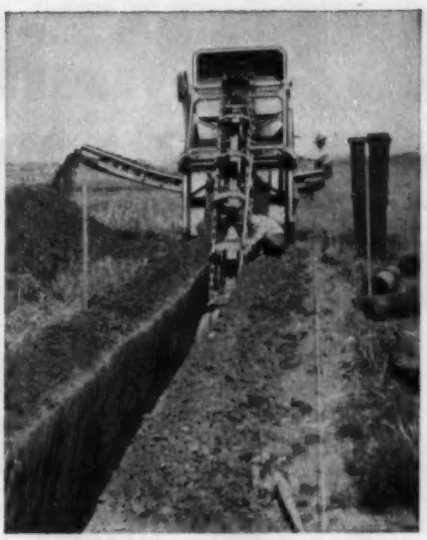
On the Koehring 16-E, the elevating boom is interchangeable with a 40 or 60-foot tower. This gives discharge heights up to 48½ feet for pouring high columns, piers, decks and upper floors. 21½-cu. ft. hoist bucket discharges automatically into 40 cu. ft. overhead hopper. Hopper is easily positioned (at 6-inch intervals) anywhere along face of tower. Tower is raised . . . or safely lowered into horizontal carrying position . . . by the same hydraulic ram used on the elevating boom. CK436



9¾ feet per minute with 250 Trenchliner®

With 30 digging feeds, Parsons 250 Trenchliner produces up to 9¾ feet of clean-cut trench per min. . . . digs 16" to 42" wide, up to 12½ feet deep . . . cuts within 11" of either side. Reversible spoil conveyor shifts through machine by power in less than 1 min. to dump right or left. Constant discharge height speeds loading into trucks. Larger and smaller models are also available . . . contact your Parsons distributor now.

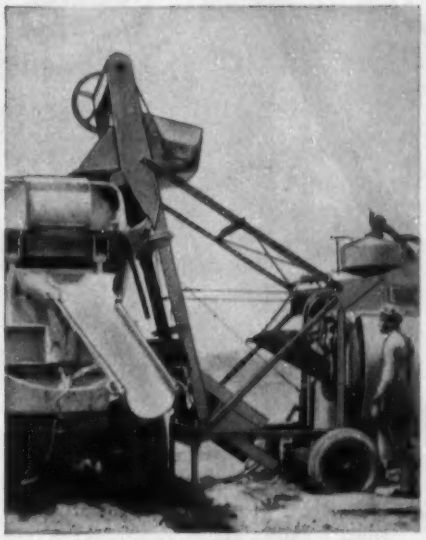
PARSONS • Newton, Iowa
(Koehring Subsidiary)



9 ft. discharge height with Tower Loader

This Kwik-Mix Tower Loader fits 11-S and 16-S Dandie® concrete mixers, discharges at 9'-1" into trucks, overhead hoppers, or stockpiles. Bucket holds full batch, is powered by mixer engine and dumps automatically at top of tower. Also available for Kwik-Mix No. 10 and 14 bituminous mixers. Get complete information from your Kwik-Mix distributor, or send for literature on low-cost, time-saving Tower Loader today.

KWIK-MIX • Milwaukee, Wis.
(Koehring Subsidiary)

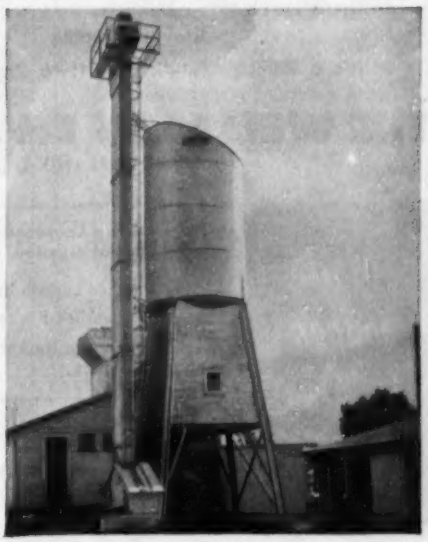


254 to 1321-bbl. Johnson cement plants

Johnson single silos: 254 to 611 bbls. Have gasoline or electric screw conveyor and bucket elevator. Also, receiving hoppers for trucks, box-cars, hopper-bottom cars. One or two 1000-lb. batchers can be used. Larger batcher, added leg and elevator height available for charging mix-trucks. Second silo at ground level increases capacity to 1321 bbls. All silos 1-piece, all-welded, 11 or 12' diameter. Have aeration, bin signals.

C. S. JOHNSON • Champaign, Ill.
(Koehring Subsidiary)

269



WELLMAN "Williams" MULTIPLE ROPE BUCKETS

Designed for digging bigger payloads

THE *double* main hinge design of these WELLMAN "Williams" buckets gives you many advantages including: lower head room when boom or crane operations are cramped; stronger, more compact construction; and a really "long reach".

These tough, top-quality buckets are fast operating and give the operator perfect control at all times.

If it's a WELLMAN—it's built to dig and last while digging.

THE WELLMAN ENGINEERING CO.

CLEVELAND 4, OHIO

Mail coupon for free bulletin

The Wellman Engineering Company
7028 Central Avenue, Cleveland 4, Ohio

Please send me bulletin on:

☐ Clamshell Buckets ☐ Stone Grabs
☐ Dragline Buckets ☐ Log Grabs

Your Name_____

Address_____

City_____ State_____

Position_____ Company_____

AUCTION . . . Continued from page 90

with the exception of one day when the auction was temporarily stopped by the action of a lawyer-policeman combination.

A prospective buyer, but also a lawyer, openly questioned the legality of proceedings during the auction by challenging the auctioneer from the floor. Apparently the lawyer was not satisfied with the forthcoming answer from Mr. Ross, so he left the auction and returned later with a local policeman. The sale was stopped for about an hour and a half, while the lawyer, policeman, Mr. Ross, and committee representing the distributor's association retired to a suite of rooms to discuss matters concerning the sale. Evidently the lawyer was satisfied with the results of the meeting, as the auction continued.

Legal Friction

Information obtained indicated that the sale stoppage seemed to revolve around a number of legal aspects. It was claimed the auctioneer was operating without a license in Massachusetts, and that he had circumvented the law by serving as an assistant to a Massachusetts auction firm. It was also claimed that the equipment was stored in one county but was being auctioned in another county.

To settle protests from the floor over "buy backs" by the sellers when bids were not to their liking, Mr. Ross announced publicly and posted a notice to the effect that "the auctioneer reserves the right to buy and sell at his discretion."

The auctioneer claimed some 4,500 persons attended the 3-day affair, but this appeared to be a wee bit high. Buyers and lookers came from a number of states and Canada.

Most distributors attending the auction agreed on one important point. The auction, if it did nothing more, would help to establish a price on used equipment because of the wide variety offered. Some felt also the prices received were 50 to 60% lower than they thought they would get, but in the same breath indicated they were satisfied with the results. The sale, coming in December, ordinarily a bad month for moving new or used equipment, took a lot of dead weight out of their yards and gave them some working capital to carry over into 1954.

One distributor claiming to take an $800 loss on a piece of equip-

THIS ALLIS-CHALMBRS HD-19, Serial No. 463, listed with a Baker cable dozer with rebuilt GM 6-71 engine and new cutting edge was reported to have been sold for $4,325.

AUCTIONEERS USED pretty professional models to get the buyer's signature on the dotted line. Here Jo Somers gets a sale contract from Isadore Segal of Hartford, Conn.

EACH POTENTIAL BUYER registered in and was given a numbered paddle which corresponded with his registration notice. When he wanted to bid, he merely raised the assigned paddle.

ment, wasn't too disturbed because as he put it, "I have no way of knowing what that same piece of equipment would bring next spring."

One statement originating from an Eastern distributor was a real classic. He said, "Generally, it's as healthy a condition as could be expected."

Quite a few voiced objections to holding the auction in the hotel. They contended it would have been a better deal for them if the auction were held at the spot where the equipment was on display. They seemed to miss the opportunity to see the equipment, and to hear it run, right on the spot.

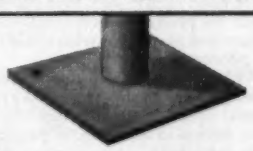
One contractor from Canada pur-

YOU CAN SET THIS SHORE IN ONE MINUTE

Speed SET

To Adjust
1. Lift upper staff, insert pin, and set on notch of Speedset that lifts head within 1½" of formwork.
2. Screw shore up final 1½" by turning built-in handle. Never more than six turns —usually less.
3. In sixty seconds or less— the shore is all set.

Three sizes for all shoring jobs
Three type heads available
Built-in nailing plates
All steel
For further information write



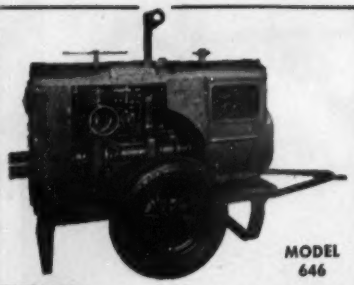
WACO Manufacturing Company
3560 Wooddale Ave.
Minneapolis 16, Minnesota

Canada
Armson Iron Works
Windsor, Ontario

West Coast
Waco-May Co.
Los Angeles, Calif.

IT'S HERE AT LAST!

A sure way to save money on your next wellpoint job is to get Foundation's new 4" 1000 GPM capacity pump . . . sturdy, compact, for medium and small wellpoint jobs. Why use big 6" and 8" pumping units and pay big fuel bills when you can use this efficient 4" pump, tailor-made for the job? Economical to operate and maintain . . . easy to move around.



MODEL 646

4" unit powered by 4-cyl. gas engine

Foundation Equipment CORPORATION

Long Island City 1, N. Y. 37-11 10th St. EXeter 2-1100

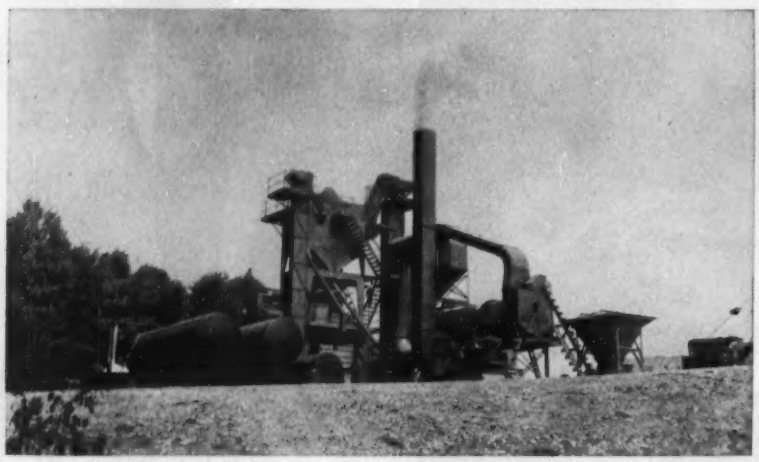
Chicago, Illinois 2608 W. 111th St Hilltop 5-8282

RENTAL — SALES

Write for Literature

The New, Improved

H & B TYPE "T" Asphalt Plant



Outstanding Efficiency In Both Production and Maintenance

Here, for the first time, is an asphalt mixing plant that gives you—in the basic plant—all of the major improvements and refinements of the past twenty years. An entirely welded structure, with no rivets and only a few bolts. Also, much of the loose bracing and miscellaneous pieces have been eliminated, making it possible to provide adequate working space and platforms with a minimum of pieces to move.

Other improvements include: all overflows are self-contained and internal in the bin; self-contained dust bin, which is an integral part of the bin structure; elimination of the screw conveyor normally used to feed dust into the aggregate weigh-box, thereby making possible a lower original investment in plant, and assuring lower maintenance costs and decreased possibility of breakdown.

This new Type "T" plant has already proved its dependability and efficiency, with outstanding records in both production and maintenance. Available with all units driven by individual electric motors and completely wired, with gasoline or Diesel engines on the main units and electric drive on the smaller units, or with gasoline or Diesel drive throughout. Complete information will be furnished on request.

H&B ESTABLISHED 1906

HETHERINGTON & BERNER INC.

America's First Builders of Asphalt Mixing Plants

735 KENTUCKY AVENUE INDIANAPOLIS 7, INDIANA

AUCTION ... Continued

chased 10 pieces of equipment and believed he had picked up some bargains. It was also reported another contractor purchased a piece of equipment and the next day resold it in the lobby of the hotel at a profit of $1,200.

According to the bid prices received at the auction, some $1 million worth of equipment was sold to slightly more than 200 successful bidders.

Prices

Here's a brief run-down on the type of equipment sold and the prices received. Where possible serial numbers are given so that age and model of equipment can be determined.

An unused Allis-Chalmers HD-15 equipped with side-boom topped the tractor bids with a price of $14,000. It was 1½ yr old.

Model HD-10W's sold at prices ranging from $4,000 to $4,900 and an old HD-19, in fair condition, brought $4,325. A Model HD-7, Serial No. 15278, brought a top bid of $4,200, although this one was equipped with a hydraulic dozer and was in good condition. Other HD-7s ranged from a low bid of $1,700 to a high of $3,250. One "junker" brought $1,100, presumably for parts.

International track-type tractors were offered and were bid fairly strong. A number of Model TD-9s sold from $1,725 to $3,400. A TD-18 with no attachments went for $3,000. A TD-14, about 8 yr old and in fair condition, brought $3,400.

Caterpillar tractors brought varied prices. A number of Canadian buyers were bidding against each other for a Model D-8 tractor equipped with a LeTourneau cable dozer. These Canadians apparently lost out on bidding when the machine was finally sold for $6,400. A couple of Caterpillar D-7s slightly the worse for age and wear brought $5,000 and $5,500, respectively. A D-6 Caterpillar tractor went for $4,000. Other D-6 tractors were sold at prices ranging from $3,350 to $3,900, although they did not appear to be in very good condition. A number of D-4s, in fair condition, went at prices ranging from $2,300 to $3,000.

According to the auctioneer, Percy Ross, the big surprise at the auction sale turned out to be the unprecedented demand for used Oliver crawlers. One thing for

(Continued on page 100)

when the rush is on . . .

GARDNER-DENVER

gives you that

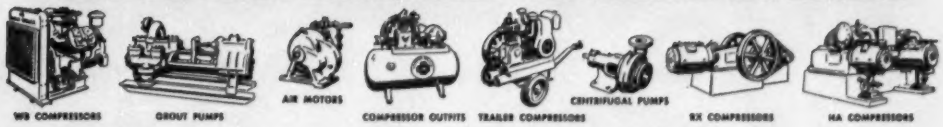
EXTRA PUSH

. . . without a letdown!

Send for bulletins on Gardner-Denver Portables, Wagon Drills, Sinkers, Paving Breakers and Sheeting Drivers, Trench Diggers and Clay Spaders, Backfill Tampers, Sump Pumps and Line Oilers.

SINCE 1859

GARDNER-DENVER



THE QUALITY LEADER IN COMPRESSORS, PUMPS AND ROCK DRILLS FOR CONSTRUCTION, MINING, PETROLEUM AND GENERAL INDUSTRY

Gardner-Denver Company, Quincy, Illinois
In Canada: Gardner-Denver Company (Canada), Ltd.,
14 Curity Ave., Toronto 13, Ontario

Here's news for YOU!

ANNOUNCING

MICHIGAN

TRACTOR SHOVELS

. . . from engine to tires Power Transmission engineered and manufactured by Clark

Faster, heavier, with greater horsepower than any tractor shovels of comparable capacity, MICHIGAN* Tractor Shovels move material faster, last longer and cost less to operate! Check these vital mechanical superiorities . . .

Clark Torque Converter
Clark Power-Shift Transmission
Clark Planetary-Wheel Axles
Hydraulic Steering Booster
Low Level Bucket Tip-Back
Short Turning Radius
High Tractive Ability
Four Speeds Forward
Four Speeds Reverse
Lights — Standard Equipment
Double-Acting Lifting and Dumping Cylinders
Gasoline or Diesel Engine

Six Models . . . To Fit Every Need

Model 12-B—1½ cu. ft. . . . . bucket drive, rear steer
Model 75-B—1 cu. yd. . . . . bucket drive, rear steer
Model 75-R—1 cu. yd. . . . rear drive, bucket steer
Model 75-A—1 cu. yd. . all-wheel drive, rear steer
Model 125-A—1⅜ cu. yd. all-wheel drive, rear steer
Model 175-A—2¼ cu. yd. all-wheel drive, rear steer

For Full Information . . .

All the facts concerning these important new machines are assembled in the MICHIGAN Tractor Shovel FACT-FOLIO—a handy and useful file containing specifications and action photographs. The coupon will bring your copy.

*A Trademark of Clark Equipment Company

CLARK EQUIPMENT

CLARK EQUIPMENT COMPANY
Construction Machinery Division
380 Second Street
BENTON HARBOR, MICHIGAN, U. S. A.

Please send the MICHIGAN Tractor-Shovel Fact-Folio

Name _____ Title _____

Firm Name _____

Address _____

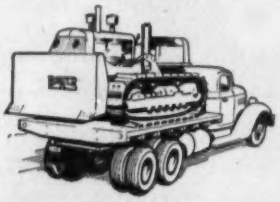
City _____ Zone _____ State _____

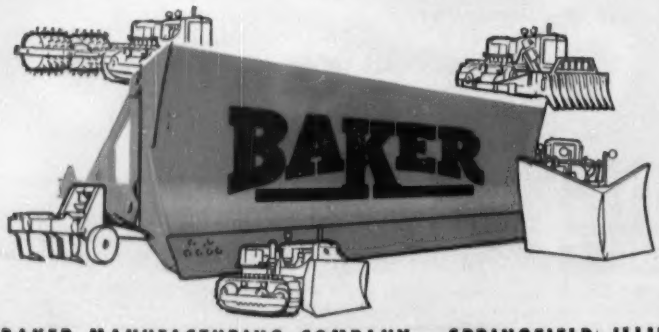
New Baker 15X—with 102 drawbar hp—combines peak yardage with portability

Proved on the famous *9X*, Baker's revolutionary Frame-Mounted, No-Pushbeam Dozer design is already rolling up yardage records on the new, powerful *15X*.

Here is a Blade 51" high but *only 96" wide* . . . portable over any highway, day *or* night, without special permits . . . that rolls up payloads with the capacity of a standard width blade. Here is a Blade mounted closer than ever before to the radiator—a simple, *rugged* design that reduces front end weight, and provides a center of gravity that puts more weight and horsepower to *work*. Engineered for *balance*, the Baker 15X Dozer permits drawbar work with the blade left *on* — without excess wear on front-end truck bearings.

See the powerful, new Baker 15X — see it in action, where you can watch its *faster* bite, *quicker* oscillation, and payload *punch* that means *more profits per yard. Ask your Baker, Allis-Chalmers Dealer for a demonstration!*





THE BAKER MANUFACTURING COMPANY • SPRINGFIELD, ILLINOIS

AUCTION . . . Continued from page 96

sure, plenty of Olivers were offered for sale, and according to the final tabulation, 45 were actually sold. Top price paid for an Oliver Model BDHL, about 2 yr old, and in fairly good condition, was $7,500. Several Model OC3s brought $2,000 to $2,600. The Model DD tractors with dozers in fair to poor condition, ranged from a low of $2,100 to a high of $4,500.

An old Model 10 USTRAC crawler tractor brought a top price of $1,220.

Sixteen types and makes of loaders were sold. A price of $4,000 was obtained for a Haiss Model 77-W in fair condition. A Scoopmobile, Serial No. PS-3352T, at least 5 yr old, went for $1,900.

Some Withdrawn

A number of items that were offered for sale in the catalog were withdrawn on the actual days of bidding, indicating apparently that some pre-sale transactions had been made, or that the equipment had not been delivered.

A Gradall was offered which did not appear to be in too good shape, yet it was claimed it brought a sale price of $15,500.

Compressor prices varied greatly. The demand for the large sizes was only moderate, but the demand for the smaller units was strong. The best price for any compressor was $3,900. This was paid for a Worthington 500-cfm Serial 195C958 in good condition. Some of the compressors, Model 85-F's, went for as low as $145.

Space heaters brought around $360 each.

Two Tournadozers Model C-SS were sold at the auction. One brought $4,500; the other $3,100.

A Barber-Greene asphalt finisher sold at a top bid of $4,800. This listed Serial No. 879A1235.

It was reported a Utah contractor purchased a 1951 Model 60 Cadillac 4-door sedan for $3,100, but later re-sold it.

A number of motor graders were offered, and the highest price paid was $4,600 for an Allis-Chalmers Model D, Serial No. D3224. An Adams 511 motor grader and another Model 412H brought $3,900 each. An old Galion Model 101 sold for $750. An Austin-Western grader, Model 99, in pretty fair condition, was reported to have been sold at $3,400. A Caterpillar Model 11, Serial No. 7G1034T in fair condition brought $2,000.

Spirited bidding appeared to

take place on the trailers sold and consequently upped the price considerably. A Schertzer Model D-25 low-boy brought $3,700.

Top price paid for rollers, $3,300, was for a used Huber three-wheel six ton machine. The lowest roller bid was $500 on a small Pierce Big Bear Serial No. LL255, a two-tonner.

The highest bid received at the auction was for a Northwest Model 80-D shovel Serial No. 15585-13018B, equipped with a Murphy diesel engine which was reported to have sold for $60,000—near list price. This machine was claimed to be brand new and never used. A Lima Model 802 shovel, Serial No. 874, went for $20,000. A P&H crane, Model 955A, Serial No. 14084, with 140 ft of boom and powered with Waukesha engine, sold at $31,000. A Link-Belt speeder shovel, Model K-360, Serial No. 2547, powered with a Caterpillar D-13000 diesel engine, brought a top bid of $14,000.

A number of Model 303 Koehring shovels were sold, the lowest bid being recorded at $2,600 and the top at $6,600. A number of P&H crawler units also were offered; topping this group was one with serial number 13876, equipped with a trench hoe reported to be in fair condition, which went at $10,800. Others went from $1,900 up to $6,900.

General Satisfaction

A number of farm and rubber-tired wheel tractors were offered and these were snapped up from the floor by small contractors. Top price paid was $2,800 for a Model 88 Oliver, Serial No. 920386.

Twenty-seven truck cranes were offered. Top price was $19,500 for a Link-Belt Model UC 90 equipped with 80 ft of boom. A Lorain Model MC-414, Serial No. 18788, a 20-tonner, with 100 ft of boom and powered with a Hercules gasoline engine, was reported to have brought $17,900.

Several Schield Bantam truck cranes also were sold. One a Model M-47, Serial No. 5106, equipped with backhoe attachment and mounted on a GMC truck, sold at $5,500.

In summary, the sponsoring group of this auction, the New England Distributor's Association appeared to be generally satisfied with the results of the auction. Mr. Ross, the auctioneer, felt that it was one of the most ingeniously publicized auction sales ever held and plans to hold more in 1954.

Water Reservoir, Omaha, Nebraska—De Buse Bros., Form Erectors

Symons Forms for Battered Walls

Battered walls are constructed similar to vertical walls, the only difference being a variation in tie lengths. Ties are placed when inside form is erected . . . outside wall is locked to ties with the same connecting bolts and wedges that bind panels together.

Send plans for your next job and get complete layout and cost sheet—no obligation. Symons Clamp & Mfg. Co., 4255-B-4 Diversey Avenue, Chicago 39, Illinois.

Here's your easy way to extra production with MILLER *Tilt-Top*

ONE MAN...

Tilts...

Loads...

Hauls... with no lost motion!

The fast loading of MILLER Tilt-Top design enables ONE man to load heavy units in less than two minutes . . . be on his way to the next job with no lost motion. This faster loading means less time *between* jobs . . . more time, more profit, from operator and machine on every job. Big and rugged . . . with advanced tapered side channel design that supports heavy loads without needless chassis deadweight . . . MILLER Tilt-Tops carry greater payloads without exceeding road limit laws.

handier
easy-to-back
priced right

Model "B" 10 ton $1175*

Optional equipment (priced extra) 16' long platform (8'x14' standard), hydraulic tilt control, 2 speed hand winch and electric brakes.

*Plus freight and Federal Tax.

MILLER ® Tilt-Top TRAILERS
research engineers
457 S. 92nd Street, Milwaukee 4, Wisc.

MAIL TODAY
Name _____
Company _____
Town _____
Street _____ State _____

Look at these amazing Tiger Brand records!

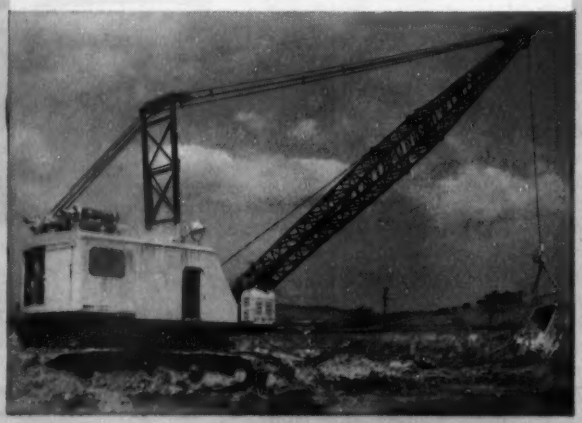
83% MORE SERVICE. This new Tiger Brand Drag Line, especially designed to withstand severe abrasion, was still in use after 1100 hours. Previous ropes had lasted an average of only 600 hours.

2 TO 3 TIMES MORE SUPPORT from these Tiger Brand Boom Supports. Interwoven ends distribute vibration over a long section of the rope instead of letting it concentrate at one point. As a result, these ropes last longer and cut boom support costs as much as 50%.

• Tiger Brand Wire Ropes are designed for the particular type of job on which they are intended to work. They have the needed balance of strength, toughness, flexibility and wear resistance. The quality is carefully controlled, from the iron mines to the finished product, and by our *own* engineers. Rigid tests and inspections at every step of the way guarantee a rope that matches the design specifications.

In addition, we maintain a staff of experienced Wire Rope Engineers to advise customers the correct rope to use, so that they get the best rope for every job.

Consult these men the next time *you* need rope. They can help you get longer service and cut rope costs.



AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION
GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

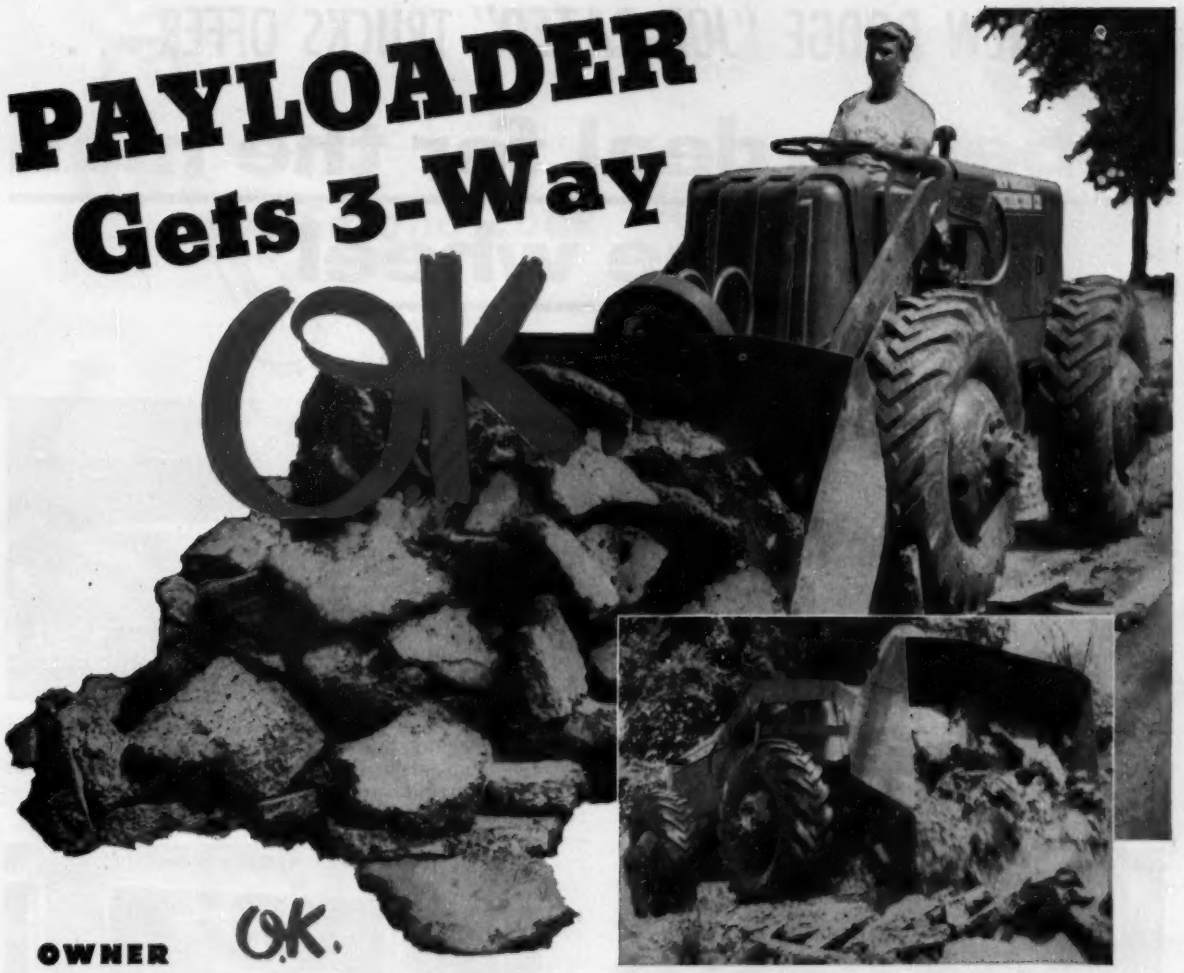
U·S·S AMERICAN TIGER BRAND WIRE ROPE

Excellay Preformed

USS

UNITED STATES STEEL

PAYLOADER Gets 3-Way OK



OWNER OK.

"I couldn't get along without my Hough 'PAYLOADER'. It does a rugged job and is easy to handle when the going is rough", says Joseph J. Girardi, President of New Rochelle Construction Co.

SUPERINTENDENT OK.

"I have no trouble staying on the job schedule with the Hough 'PAYLOADER'. There is not another machine on the market that can do the job it does", says Mr. Girardi's Superintendent.

OPERATOR OK.

"A Hough 'PAYLOADER' is a fine machine. It is easy to operate, with good visibility", says the operator of this 4-wheel drive Model HR "PAYLOADER".

You too are assured of getting the latest and best in tractor-shovels when you buy a "PAYLOADER". You have a choice of a complete line to best fit your needs — sizes from 12 cu. ft. to 1½ cu. yd. bucket capacity — choices of 4-wheel drive, rear-wheel drive or front-wheel drive — gasoline or diesel power. Your nearby Hough Distributor is ready to give you complete information. The Frank G. Hough Co., 706 Sunnyside Ave., Libertyville, Illinois.

WRITE for name of your Hough Distributor and information on the complete "PAYLOADER" line of seven sizes.

SAY "HUFF"

PAYLOADER®

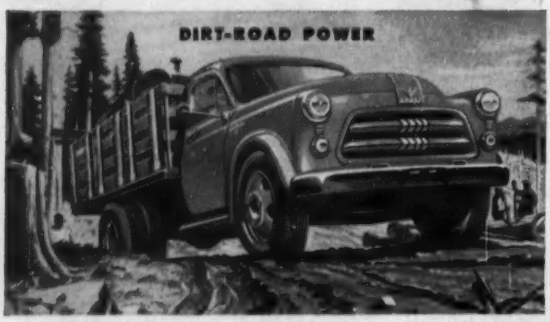
THE FRANK G. HOUGH CO. • Since 1920

NEW DODGE *"JOB-RATED"* TRUCKS OFFER . . .

A better deal for the man at the wheel

A better deal in comfort, visibility! More vision area than in any other leading make. New easy-chair seats with most hiproom. New cab sealing against dust, drafts. New two-tone interior styling.

A better deal in loading height with pick-up and panel floors as low as 22½ inches from the ground . . . knee-high for loading ease. Lower running boards for easier entry. Lower hood for greater visibility.

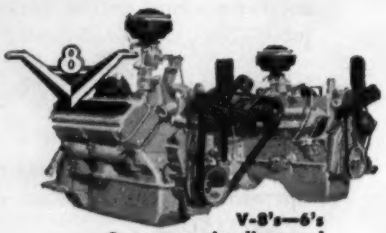


A better deal in power from famous 6's and the most powerful V-8's of all leading trucks. V-8's with efficient hemispherical combustion chambers are available in 1½-, 2-, 2½-ton, standard on 2¾-, 3-, 3½-ton.

A better deal in handling ease! New steering system keeps Dodge ahead of the field with the sharpest turning of any comparable trucks. New power steering available in 4-ton models.

New Dodge *"Job-Rated"* trucks are designed to save the driver time and effort—to give the man at the wheel "a better deal" and make him more efficient. Dodge trucks offer a better deal for the man who pays the bills, too. They're priced with the very lowest; and their low operating costs can save the owner hundreds of dollars during their long lifetime of service.

So, for a better deal on a new truck, see your friendly Dodge dealer. He knows trucks, and he's the kind of a man you can rely on completely. See or phone him today.



V-8's—6's
2 great engine line-ups!

SEE YOUR FRIENDLY DODGE DEALER

NEW DODGE "Job-Rated" TRUCKS

A Second Look

The Caterpillar No. 6 Tractor-Shovel*

CATERPILLAR'S No. 6 Tractor-Shovel had been in the field 6 months when CM&E editors went out and talked to owners, operators and servicemen on jobs in the east, west, north, south and middlewest. On the basis of this survey of impartial observers—it is felt that Cat has an outstanding product in the No. 6 Tractor-Shovel.

Several Caterpillar dealers cooperated by supplying lists of all No. 6 Tractor-Shovel owners in their respective territories. One or two names were picked from each list furnished. The dealer had no idea which owners would be approached.

Caterpillar dealers who cooperated were H. O. Penn Machinery Co., Inc., New York; R. L. Harris, Inc., Knoxville; Ohio Machinery Co., Cleveland; Fabick Tractor Co., St. Louis; Geo. W. Crothers, Ltd., Toronto, Canada; and Shepherd Tractor & Equipment Co., Los Angeles.

Three different questionnaires were used—for owners, operators and servicemen.

Follow-Up on New Equipment

• For more than 4 years *Construction Methods and Equipment* has been publishing reports entitled "New Equipment Development." The editors believe that readers are entitled to more detailed information regarding outstanding new equipment developments than is usually given in the manufacturer's news release. These reports are written by a member of the staff, and only after a personal visit to the plant to talk to the engineers and officials, to see the equipment being made, to observe it in action, and if possible, even to operate it and put it thorugh its paces for his own satisfaction. Out of all this comes our idea of the new machines and their possibilities.

Our readers like these reports, according to Readex surveys. Although accurate and complete as they can be at the time of writing—when the equipment is first put into production—the reports cannot contain full field performance data and opinions of owners and operators. To supply such information, we are launching follow-up reports under the general title "A Second Look," based on personal contacts in the field. We will submit a copy of each report to the manufacturer before publication so that he may add his comments, if any, especially as to changes under way or planned.—THE EDITORS

What the Operators Said

Q. What is the most outstanding feature you like about the No. 6 shovel?

ANSWERS:

"It's rugged—plenty of iron."

"It has plenty of power and the system of bucket control is excellent."

"Like the power it has. It will run in a higher gear than competitive machines. Has faster lift and dumping. It's way ahead of any other similar machine."

"I like the machine period."

"Like forward and reverse control."

"It's a good outfit—tops."

"Built by one manufacturer. Parts and service from one source. Rugged and fast."

Q. What don't you like about the No. 6 shovel?

ANSWERS:

"Pump isn't strong enough."

"They should have cleats on the tracks like the D4."

"They need to do some work on the radiator. It needs a radiator cap cover and a wire guard to keep rock out."

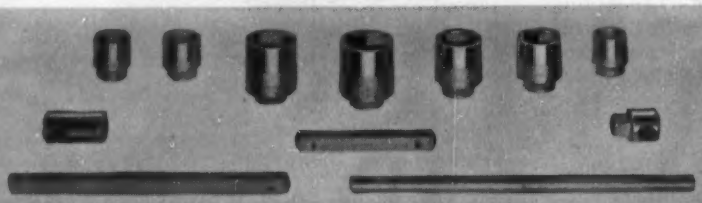
(Continued on next page)

* See "Caterpillar's Newest . . . the No. 6 Shovel," CM&E April 1953, p. 132.

Contractors Look to Bonney

for quality heavy-duty tools...

Tools for servicing trucks, stationary engines, off-the-road equipment



Bonney makes a complete line of heavy-duty tools specially designed, forged, and heat-treated to stand the gaff in rugged service—whether it's actual construction work or the servicing of automotive and stationary equipment.

Construction men find that Bonney tools save time on even the toughest jobs, and reduce the danger of injuries so often caused by the use of inferior tools. Bonney Tools are available at automotive jobbers everywhere.

BONNEY FORGE & TOOL WORKS, ALLENTOWN, PENNSYLVANIA

A SECOND LOOK ... Continued

"Don't like the angle of cutting edge of bucket."

"Seat should be moved over eliminating opening."

"Should make bigger and better bushings on heavy arm of bucket arm. Need better master track pins. Should have belly guard."

"Cat claims 2-yd bucket—think it is really 1½."

"Don't know yet."

Q. If you could improve this tractor-shovel, what would be your No. 1 recommendation?

ANSWERS:

"Needs torque converter. Frame needs strengthening."

"I'm satisfied with it as it is."

"Arms should be shortened so the operator's view would be better."

"Would put cleats on tracks."

"Would improve trip valve so it will hold a bigger load."

"More accessibility for engine maintenance."

Q. By comparison with other Cat equipment you have operated, how does this No. 6 shovel compare?

ANSWERS:

"Easier to steer than a D4."

"This one will stand up with rest of Cat equipment."

"It's a better rig than the D4."

"Much better machine."

"Much better than D4. D4 is too hard to steer."

"Better master clutch."

Q. By comparison with other equipment (not Cat), which do you prefer from an operator's standpoint? Why?

ANSWERS:

"Competitive machine is faster."

"Prefer Cat to competitive machine which we have."

"Have run competitive machine but prefer Cat. Riding comfort and operating comfort of competitor's tractor better than Cat. Cat will outwear competition two to one."

"Would rather have competitive machine. Will do more work."

"Competitive machine easier to

(Continued on page 108)

Your P&H dealer has it!

NOW... at the industry's lowest price!

Step out in front with MITI-MITE

Here's why more and more users are buying MITI-MITE — for new ideas —money-saving performance—proved design.

Tops in Quality Construction

It's the simplest, most rugged, most dependable little truck crane ever built — with all the honest-to-goodness quality the P&H name implies! It's easier to operate. And by far the easiest machine of its kind to maintain.

Lowest Price

No other small truck crane gives you so much for so little money. It's loaded with modern features as standard equipment — not extras at additional cost.

Greater Earning Power

For 101 jobs all over the map! P&H's greater stability lets you put "more on the hook" — work faster on any kind of job with less danger of tipping. Greater work capacity means more earning power — more money in your pockets.

It will pay you to buy **now**. Place your order today!

P&H

MITI-MITE

(Model 55)

Fully convertible.
11 cu. ft. capacity as hoe, shovel, etc.
7 tons as a crane.
It's a terrific buy!

P&H TRUCK CRANES

HARNISCHFEGER CORPORATION

Milwaukee 46, Wisconsin

the P&H Line

See your P&H dealer NOW!

"Your P&H Dealer has the experience, the organization and the facilities to serve you reliably in every way. He's ready to deliver the kind of on-the-ground service that keeps your jobs moving on schedule. Your P&H dealer is tops in the business. Get to know him."

fastening costs cut 30%

DRIVE-IT 320 WITH BREAK-OPEN ACTION

This Alaskan builder uses the new DRIVE-IT 320 with Break-Open Action to fasten 2x6 base plates to concrete block. The powder-operated tool "is more economical by at least 30%; results in material and money savings".

Almost all concrete or steel anchorages can be made with more savings and greater strength with DRIVE-IT.

NEW DRIVE-IT 320 FEATURES BREAK-OPEN ACTION FOR FAST, EASY LOADING AND EXTRACTION. OTHER JOB-PROVED DRIVE-IT FEATURES ARE:

ONE POWER LOAD. Variable penetration with one strength power load.

AUTOMATIC EXTENSION BARREL. Integral with tool. Extends to fasten in recesses.

SWIVEL SAFETY PAD. Swivels 360° to fasten near adjoining surface. Steel and tough Neoprene for protection.

SAFE TWO-HAND FIRING. Tool must be held against work to operate. Two-motion firing action for safety.

LOW COST DRIVEPINS. Prices are lower on wide range of drivepins.

FOR MORE INFORMATION

MAIL THIS COUPON

POWDER POWER TOOL CORP.
7526 S. W. Macadam Ave., Dept. C
Portland 1, Oregon

☐ Please send literature on DRIVE-IT "320"
☐ I'd like a demonstration of DRIVE-IT "320"

Name_____

Address_____

City_____ State_____

DRIVE-IT
the original
POWDER-ACTUATED TOOL

A SECOND LOOK ...
Continued from page 106

handle. Better bucket. No. 6 makes my legs tired."

"More stability, faster, better visibility."

Q. *Does it load, dig, bulldoze and stack satisfactorily?*

All answered "yes."

Q. *Do you consider this unit safe to operate under all conditions?*

All answered "yes."

Q. *In what type of work has this tractor been used?*

ANSWERS:

Construction Work
Sand and Gravel
Grading and backfilling
Digging Culverts in Rock
Loading Rock
Scarifying

The Owners Speak Up

The owner has to pay for the machine and hopes to earn a profit so his answers were mighty important. Here are owner's questions and replies:

Q. *Do you think you made a good buy in your No. 6 Shovel?*

All but one owner answered "yes."

The main complaint from the one saying "no" was clutch trouble. He owned one of the first models equipped with a dry clutch. (Caterpillar changed from dry to oil clutch on later models.)

Q. *Is this your first buy or have you owned Cat equipment in the past?*

All owned Cat equipment in the past.

Q. *Has it exceeded or failed to live up to manufacturer's claims?*

ANSWERS:

"Exceeded."

"Failed to live up to claims."

"Will live up to claims."

"This No. 6 surprised all of us. We thought it would be too small for our work."

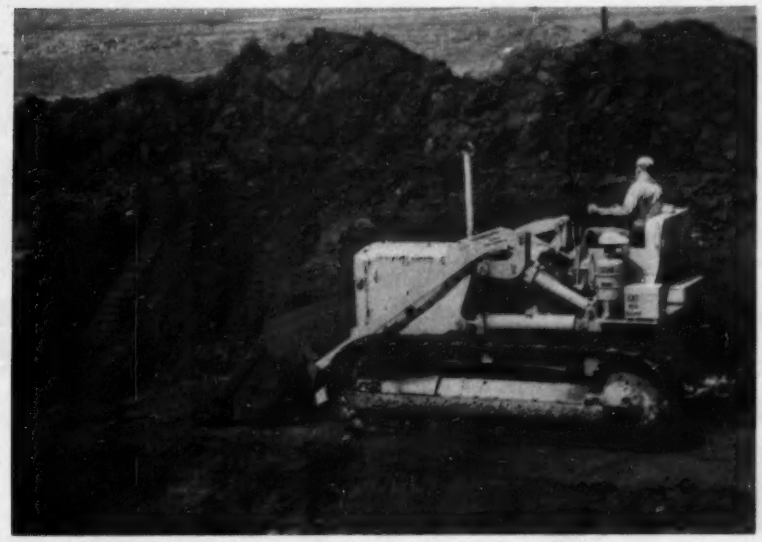
Q. *If you need another tool similar to the No. 6 Shovel would you buy another one?*

(Text continues on page 111)

The owners like the No. 6 Shovel ...

CATERPILLAR NO. 6 SHOVEL owned by Jess F. Howes & Sons, Sidney, N. Y., works in a borrow pit on a roadbuilding operation between Cadosia and Apex, N. Y.

D. R. SMALLEY & SONS, Celina, Ohio, used this No. 6 Shovel to clean out culvert and pile broken concrete from pavement on a construction job near Wellington, Ohio.



LIKE ITS PREDECESSOR, the No. 4 Shovel, the No. 6 is ideal for excavation work. This one was used on a housing project to dig basement near Kansas City, Mo.

Ask the man behind the gun . . .

White gives you everything you want in an engineer's transit

Shown, model 7014 with "A" standard. "U" type also available. $575.00* complete with tripod case and field equipment.

WHY are more and more engineers and builders choosing White Engineers' Transits? Basically, the reason is simple: White transits are designed and built for the man in the field. They incorporate all the work-saving, accuracy-boosting features . . . the rugged construction . . . the simplified quality components that you want. In addition, you get coated optics, covered leveling screws and internal focusing Telescope. Wide frame tripod is optional.

YOUR CHOICE OF THREE RETICULES AS SHOWN BELOW —

Fig. I Cross hair arrangement for our standard levels.

Fig. II Stadia hair arrangement for our standard transits.

Fig. III Special stadia hair arrangement, furnished upon request.

To get the details on the complete White line of instruments for Engineers, Surveyors and Builders, write for Bulletin 1053. DAVID WHITE COMPANY, 343 W. Court Street, Milwaukee 12, Wisconsin.

DAVID WHITE COMPANY

We offer the most expert REPAIR SERVICE on all makes, all types of instruments

*Prices subject to change without notice.

Cedarapids
Built by IOWA

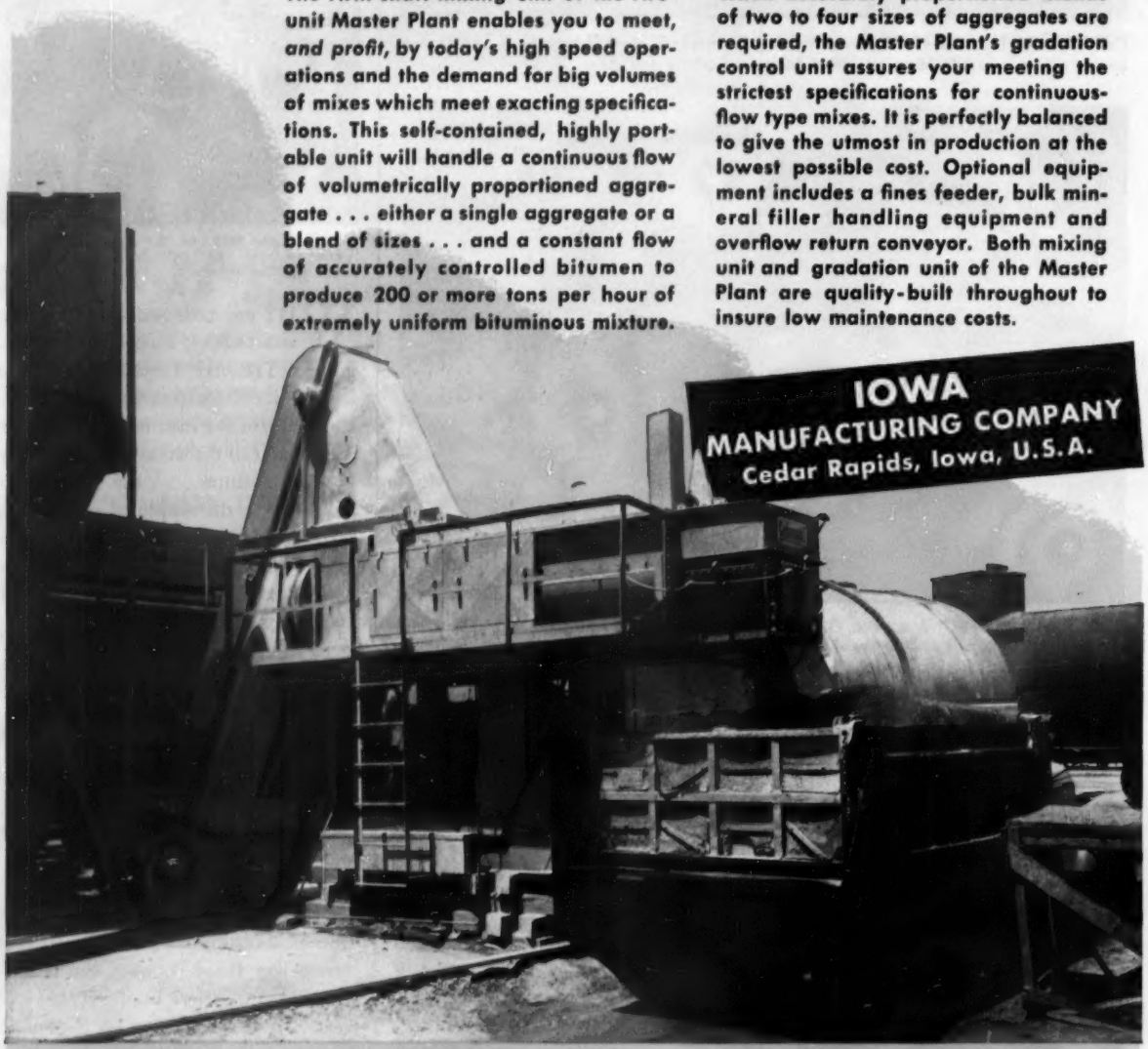
MASTER BITUMINOUS MIXING PLANTS GIVE YOU

BIG-VOLUME OUTPUT TO LICK TIGHT SCHEDULES

The twin-shaft mixing unit of the two-unit Master Plant enables you to meet, *and profit,* by today's high speed operations and the demand for big volumes of mixes which meet exacting specifications. This self-contained, highly portable unit will handle a continuous flow of volumetrically proportioned aggregate . . . either a single aggregate or a blend of sizes . . . and a constant flow of accurately controlled bitumen to produce 200 or more tons per hour of extremely uniform bituminous mixture.

ACCURATE GRADATION TO MEET THE MOST EXACTING SPECIFICATIONS

When accurately proportioned blends of two to four sizes of aggregates are required, the Master Plant's gradation control unit assures your meeting the strictest specifications for continuous-flow type mixes. It is perfectly balanced to give the utmost in production at the lowest possible cost. Optional equipment includes a fines feeder, bulk mineral filler handling equipment and overflow return conveyor. Both mixing unit and gradation unit of the Master Plant are quality-built throughout to insure low maintenance costs.



Commander Crushing and Screening Plant

Motorized Head Pulley

Vibratory Soil Compactor

Model G-60 6000-lb. Bituminous Mixing Plant

A SECOND LOOK ...

Continued from page 109

All but one indicated they would buy another No. 6 Shovel. One said he would demand a competitive demonstration before making any purchase, but still would buy a No. 6.

Mechanic Not Overlooked

The serviceman was important in this survey, too. The answers received prove he definitely should be considered by engineers when designing a new product.

Q. What have you had to repair or adjust most often on your No. 6?
A. Clutch, brakes, new bushings and track pins.

Q. Have you had to replace any parts?
A. New bushings and track pins, hydraulic hoses, and side arms.

Q. Is this tractor easy to service and maintain?
A. All indicated yes. One said "Beautiful to grease."

Q. Has the manufacturer made it easy for you to get at routine check points on the tractor?
A. Yes.

Q. How often have you had to call in dealer servicemen?
A. One called twice. One called once. The others have not called yet.

Q. Are parts easy to get?
A. All answered yes.

Q. How many hours on equipment?
A. The average of the machines was 257 hr.

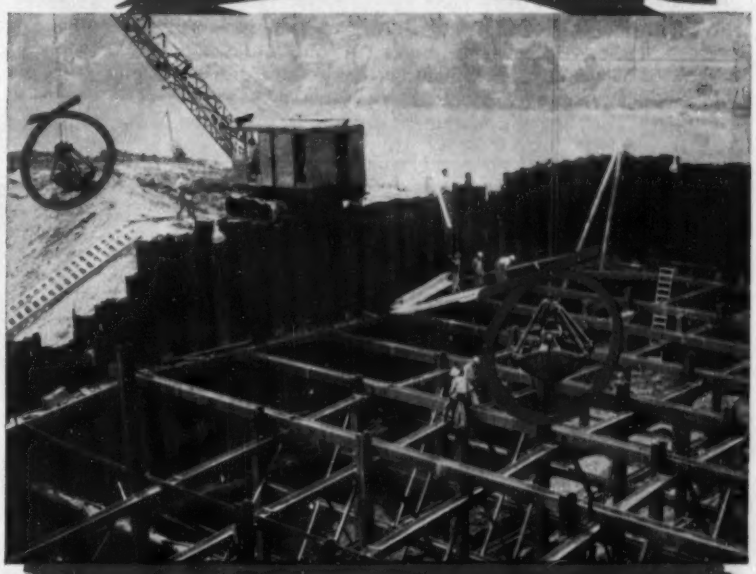
Caterpillar's Comments

Caterpillar Tractor Co. was given a copy of the survey results and invited to comment. Here is the answer:

"Caterpillar appreciates this opportunity to comment on customer remarks about the No. 6 shovel. This company receives many suggestions from customers concerning its products, and it is a regular practice to review these comments carefully.

"These suggestions are reviewed by various departments to see in what way our products can be improved. Actually Caterpillar seeks to prove the product prior to the time it is sold to the customer. Millions of dollars are spent

PLACEMENT CONTROL



AN OWEN FEATURE

The placing of a bucket in a narrow trench or caisson; or between closely spaced cribbing requires skill.

Whether it "lands" properly to assure efficient digging is largely a matter of correct bucket design.

Many an operator prefers Owen Buckets because they respond readily to his efforts — go where he wants them to go — and land in unseen places in an upright position ready to take a tremendous bite.

It's largely a matter of design — proportioning and balance, all of which are built into every Owen Bucket as a result of decades of "know-how" based on specialized experience.

AN ARMFUL AT EVERY GRAB

THE OWEN BUCKET CO.

6020 Breakwater Ave., Cleveland 2, Ohio

BRANCHES: NEW YORK, PHILADELPHIA, CHICAGO, BERKELEY, CALIFORNIA, FT. LAUDERDALE, FLORIDA

on research, testing the product under the most difficult conditions within the plant and at the Caterpillar proving grounds.

"The No. 6 shovel, as with all other Caterpillar products, went through a rigorous test at Caterpillar before it was released to dealers for selling to customers.

"It is interesting to note that very few comments have been received either at Peoria or at our dealers various places of business. This is usually an indication the product is doing very well in the field. The specific comments made by customers in the foregoing can be reviewed as follows:

"Where insufficient pump pressure has been evident, the operator should have a Caterpillar service representative check the pressure relief valve setting on the machine.

"Bolted on cleats similar to the D4 will probably be available at a later date for the No. 6 shovel. A radiator cap cover is now available, and when this cover is used the present wire guard is satisfactory.

"In reference to the angle of the cutting edge of the bucket, operators of No. 6 shovels have commented on the good digging ability of this bucket and its cutting edge.

"Changes are being made in the seat to eliminate the opening, although the cushion can be easily shifted over by the operator by moving two dowels. We don't understand this objection to bushings, as he does not mention having any trouble with them. A belly guard is now available as special equipment for production machines and machines in the field.

"Bucket capacity is 2 yd heaped and 1½ yd struck.

"We believe the No. 6 shovel does a very satisfactory job without the complications of a torque converter installation. The shovel frame and lift arms have been strengthened, and machines in the field are being reworked at no cost to customers.

"We have had comments from operators on the very good visibility on the No. 6 shovel. Shorter lift arms and dump arms would shorten the lift height and dump reach, and we don't want to sacrifice these.

"We do not understand what is meant by the comment concerning 'improve trip valve so it will hold a bigger load.'

"During the design of the No. 6 shovel, extensive consideration was always given to providing as much clearance as possible for the proper maintenance and servicing of this machine.

"Improvement and length change have been made on hydraulic hoses. Permanent end hoses are used in critical places. (Caterpillar Tractor Co. is supplying new hoses and reinforcements for the lift arms).

"The Caterpillar policy of testing the machine thoroughly before releasing to dealers has proved highly effective in placing trouble-free machinery in the field. While we place value upon the observations of owners and operators, we believe that it is mandatory for us to manufacture these machines of the highest quality possible for the money spent by the customer. In other words, Caterpillar delivers completed products thoroughly tested and designed to meet the conditions Caterpillar claims they will meet. Caterpillar will continue to follow this policy of making changes and improvements to adapt these machines for new uses and to insure satisfied customers from both the operational as well as the service maintenance standpoint."

KOHLER ENGINES

4-CYCLE
AIR-COOLED

K90 3.6 H.P.
K160 6.6 H.P.
K330 12.0 H.P.
K660 26.8 H.P.

Kohler Engines are engineered and manufactured to the high standards which have made the Kohler mark known for quality the world over.

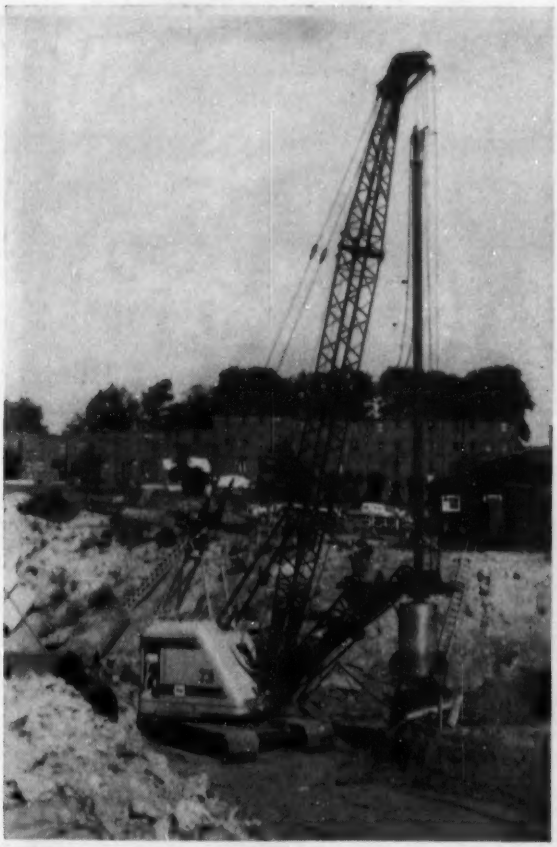
Power for garden tractors, pumps, sprayers, snow removal equipment, grain elevators, hoists, portable saws, concrete mixers, compressors, industrial lift trucks.

Write for information

Kohler Co., Kohler, Wisconsin
Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS



GAR WOOD FOUNDATION BORER, completely convertible, will do the four basic types of boring—straight flat, caissoned, bell bottom and multiple taper. This one carried an 85-ft boom.

MOUNTED on a Gar Wood Model 75B crane, this outfit was boring holes 36 to 54 in. in dia down to depths of 55 ft on the Eastern Pennsylvania Psychiatric Institute project in Philadelphia.

Hole-in-One Operation

IN PHILADELPHIA, Buckley & Co., contractors, are using a new Gar Wood Foundation Borer attachment to dig 397 footings for the new Eastern Pennsylvania Psychiatric Institute, and reports are the rig is doing the job better, faster and at a saving of $1 per ft over hand digging methods.

Working on a subcontract from Turner Construction Co., the Buckley concern is, in one operation, belling and boring these holes 36 to 54 in. in diameter and going down as deep as 55 ft.

In average soil conditions, the digging speed of the unit is claimed to be about 1 ft per min, but because of rock and tough fill, which the Buckley organization completed some 25 yr ago, the unit is averaging only about 150 ft per day on the Philadelphia job.

The Foundation Borer is mounted on a regular Gar Wood Model 75B Crane with GM Diesel Series 3-71 engine on an 85-ft boom using a 70-ft boring stem. In spite of the length of the boring stem there appeared to be no vibration. The borer can also be used on a Gar Wood Model 75 BT truck crane and the standard 75A crane. It is also completely convertible, according to the manufacturers, to a shovel, trench hoe, dragline, clamshell or pile driver.

It can be used on a wide variety of applications such as foundations, piers, caissons, piles, footers, ballast holes, buried tanks, wells, wall supports, soil borings, septic tanks, strata samplings, dikes, shores and harbor or river improvements.

It does a good job on the four basic types of borings, such as straight flat, caissoned, bell bottoms and multiple tapers.

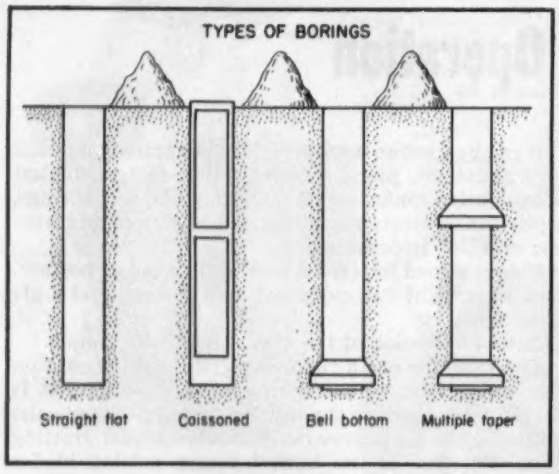
Actual operation of the unit is relatively simple.

The machine has a revolving cylindrical bucket on the bottom end of the boring stem. The bucket is driven by a positive chain drive and started into the ground through a previously located metal starting ring. Rotation of the bucket causes cutting blades on the bottom and side to guide soil into it. Cutting teeth and vanes on the bucket are controlled hydraulically with one lever by the operator.

After a helper, peering down into the hole and watching the material pile up through the open top end of the bucket, sees that it is full, it is raised and swung away from the hole where it is dumped by opening the bottom doors and belling vanes.

Belling of holes is accomplished by opening the side vanes at any desired depth. Boring and belling

RIG WAS USED for double-duty work. It not only bored the 397 footings, but was also used to lower the steel caissons into the holes, necessary because of cave-in tendencies.



are done by the same bucket. Multiple belling can easily be obtained with the rig.

After the hole is bored and belled, it is ready for concrete to be poured. No backfilling is necessary, because the borer makes a clean, round hole without disturbing the surrounding ground. In most cases, no reinforcing is needed, but if soil has a tendency to cave, heavy-duty steel caissons can be used.

BORING AND BELLING are done by this same bucket. The cutting tooth and vanes are controlled hydraulically by the operator.

EXAMPLE OF ONE of the completed footings. The borer makes a clean, round hole without disturbing the surrounding soil.

BIRD'S-EYE VIEW of the borer in operation. The steel caissons give sufficient clearance to permit the borer to operate freely.

NEW OLIVER 88WT Hydro-Trencher

Digs to 10 feet in toughest going!

Here is a trencher that won't stop when it comes to rocks or roots. Tremendous hydraulic down pressure forces the half-yard bucket into the ground for a fast, full load. New dual-circuit control gives constant pressure, more positive control and greater flexibility in any kind of going.

Take a close look at this new trencher. It reaches long and digs deep. Its simple, sturdy construction and all-hydraulic operation give low maintenance and long service. The hydraulic stabilizer blade not only holds the tractor level and steady, but is an excellent back-filler blade. And, by simply turning the trencher bucket around you have an efficient swing loader.

Test the new Oliver 88WT Hydro-Trencher on your work. See how easy it is to operate and how readily it digs or loads the toughest material. And remember, the 88WT is ready to work or move instantly, and takes only one man to operate. Get in touch with your Oliver Industrial Distributor for a demonstration, soon!

Right through the roadbed! Powerful hydraulic down pressure digs through this material with ease. Positive dual-circuit control gives a choice of *three* separate lift or drop speeds on the boom for any condition. Bucket rotation and dipper stick design permit clamping rocks larger than the bucket itself. Special boom cylinder available for digging to 12 feet.

It's a swing loader, too! Remove the bucket hinge pin and turn the bucket around. In minutes the trencher becomes a loader. No extra parts are needed. The exceptional bucket rotation permits loading into a truck up to 10 feet, 6 inches. Optional loading bucket loads up to 12 feet.

One-half yard bucket! The fast hydraulic operation and big bucket capacity of the 88WT let you do more in less time. All-hydraulic operation means, too, that there are no expensive cables or clutches to replace. Maintenance is simple and low cost.

THE OLIVER CORPORATION

400 West Madison Street, Chicago 6, Illinois

The Construction Dollar:

Seven Helps to Spending It Wisely

By H. E. WHITNEY, Engineer in Charge of Cost & Planning Construction Dept., Dravo Corporation

RATHER THAN THINKING of cost control as limiting expenditures or keeping gainful cost records, construction engineers should think of it in a more encouraging sense. They should regard it as spending money wisely, while remembering that timely and usefully documented cost records are a vital guide to profitable commitments and economy of operations.

Well-planned interrelated activities of engineered construction will encourage all members of the company to think in terms of spending other people's money carefully and efficiently, with resultant benefits to customers, employees of the firm and investors who put their money into the project. As a preliminary move in studying various ways to bring about this teamwork, let's approach the problem by considering the following constructive influences and the possible advantages to be gained by them.

These Cost Controls Will Save You Money:

1. Careful Advance Planning
2. Job Scheduling
3. Timely Expediting
4. Timely Use of Labor and Mechanization
5. Waste Elimination
6. Protective Arrangements
7. Cost Analyses

1. Careful Advance Planning

The general superintendent of construction first examines the specific requirements of each job, selects a job superintendent with suitable qualifications and discusses with him the scope of the work and the specific problems involved. The job superintendent then reviews and familiarizes himself with drawings and engineering instructions, plans operations, and adapts standard construction methods to the plan. Where specific methods have been decided upon previously, the superintendent should be advised.

It is especially desirable, profitwise, to study the comparative economy of various methods and advise the superintendent how

(Text continues on page 119)

FELKER
DI-MET
MODEL
252

CUTS MORE FEET PER DAY!

LENGTHENS BLADE LIFE!

LOWER COST-PER-CUT!

MAKES MORE FOOTAGE PER DAY. Model 252 is SELF-PROPELLED! Cuts faster, requires no tiresome pushing on long straight-a-way-cuts! Eliminates frequent rest periods and loss of footage!

DIAMOND BLADES LAST LONGER — Smooth, uniform travel eliminates sudden bumps, jolts, side deflections and similar causes of diamond wheel damage. Field reports show up to *DOUBLE* the life from your diamond wheels!

HUSKY, SELF-STARTING 13.5 HORSEPOWER ENGINE — Standard equipment. Also available with 26 h.p. engine (illustrated) for deep cutting with large wheel sizes. CUTS 7 INCHES DEEP with 18" blade! Uses any blade diameter between 10" and 18"

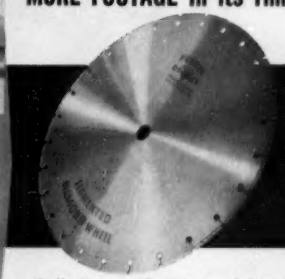
RIGHT OR LEFT HAND OPERATION — Spindle uses diamond wheel on either end.

HYDRAULIC LOWERING AND RAISING MECHANISM eases blade into and out of cut, minimizes blade shock.

WORKS CLOSE TO WALLS, CURBS, ETC. Special hinged blade guard lifts up, exposes wheel for close-up jobs.

Other concrete cutter models available. Ask for literature or see your local DI-MET dealer!

DI-MET
SEGMENTED TYPE
the DIAMOND BLADE with MORE FOOTAGE in its rim!

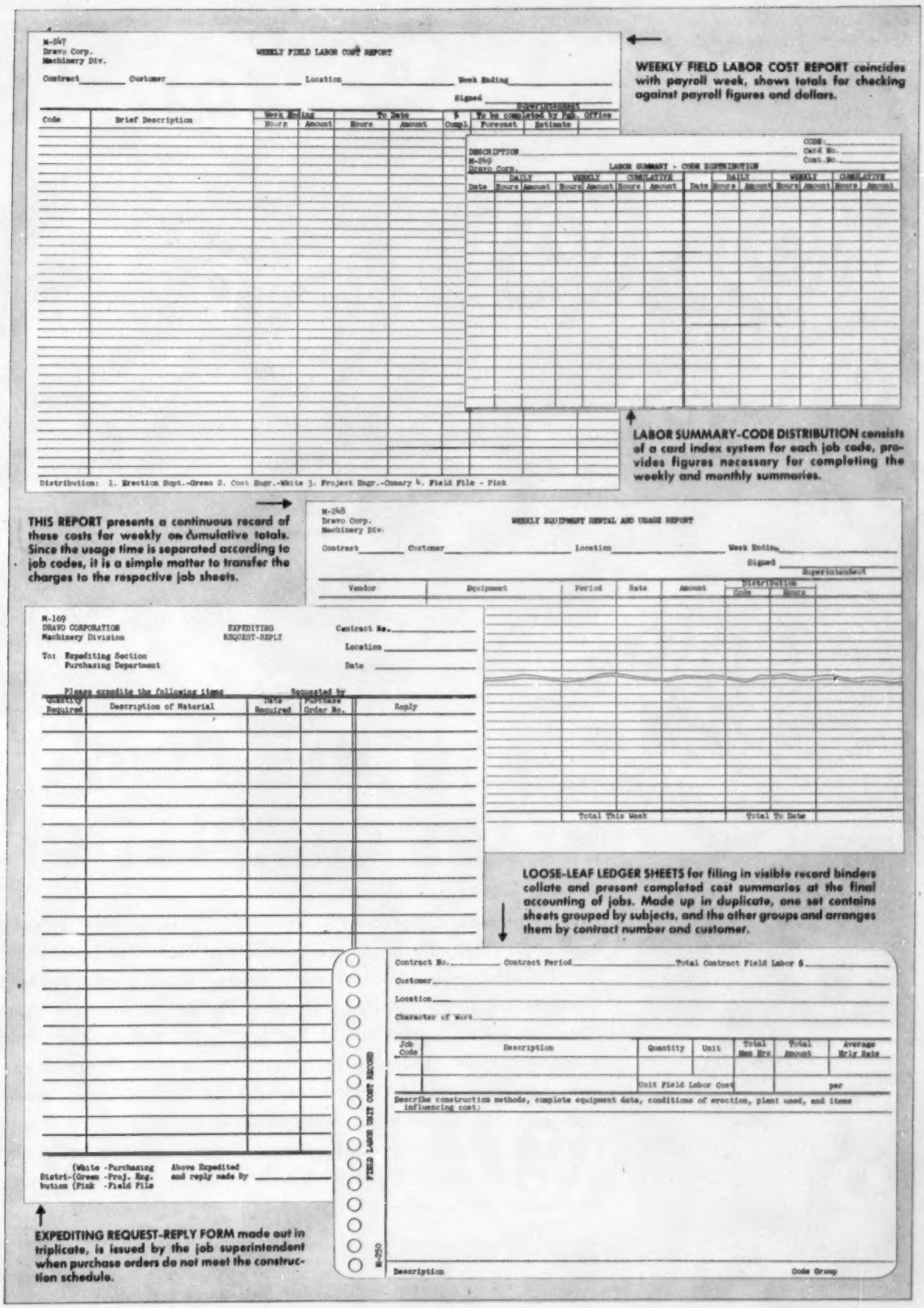


Built in a wide range of bond variations to deliver *peak performance* on your individual job! The right bond means longer life, lower cost-per-cut! Specify DI-MET Segmented Type.

CELEBRATING OUR 30th ANNIVERSARY SINCE 1924 FELKER DI-MET

FELKER MANUFACTURING CO.
TORRANCE, CALIFORNIA

WORLD'S LARGEST AND OLDEST MANUFACTURER OF DIAMOND ABRASIVE CUT-OFF WHEELS AND MACHINES



M-247
Dravo Corp.
Machinery Div.

WEEKLY FIELD LABOR COST REPORT

Contract_____ Customer_____ Location_____ Week Ending_____

Signed_____ Superintendent

Code	Brief Description	Week Ending Hours	Week Ending Amount	To Date Hours	To Date Amount	% Compl.	To be completed by Fld. Office Forecast	Estimate

Distribution: 1. Erection Supt.-Green 2. Cost Engr.-White 3. Project Engr.-Canary 4. Field File - Pink

WEEKLY FIELD LABOR COST REPORT coincides with payroll week, shows totals for checking against payroll figures and dollars.

M-249
Dravo Corp.

LABOR SUMMARY - CODE DISTRIBUTION

DESCRIPTION_____ CODE:_____ Card No._____ Cont. No._____

Date	Daily Hours	Daily Amount	Weekly Hours	Weekly Amount	Cumulative Hours	Cumulative Amount	Date	Daily Hours	Daily Amount	Weekly Hours	Weekly Amount	Cumulative Hours	Cumulative Amount

LABOR SUMMARY-CODE DISTRIBUTION consists of a card index system for each job code, provides figures necessary for completing the weekly and monthly summaries.

THIS REPORT presents a continuous record of these costs for weekly or cumulative totals. Since the usage time is separated according to job codes, it is a simple matter to transfer the charges to the respective job sheets.

M-248
Dravo Corp.
Machinery Div.

WEEKLY EQUIPMENT RENTAL AND USAGE REPORT

Contract_____ Customer_____ Location_____ Week Ending_____

Signed_____ Superintendent

Vendor	Equipment	Period	Rate	Amount	Distribution Code	Distribution Hours
		Total This Week			Total To Date	

M-169
DRAVO CORPORATION
Machinery Division

EXPEDITING REQUEST-REPLY

Contract No._____
Location_____
Date_____

To: Expediting Section
Purchasing Department

Please expedite the following items Requested by

Quantity Required	Description of Material	Date Required	Purchase Order No.	Reply

Distribution: (White -Purchasing (Green -Proj. Mgr. (Pink -Field File

Above Expedited and reply made by _____

EXPEDITING REQUEST-REPLY FORM made out in triplicate, is issued by the job superintendent when purchase orders do not meet the construction schedule.

LOOSE-LEAF LEDGER SHEETS for filing in visible record binders collate and present completed cost summaries at the final accounting of jobs. Made up in duplicate, one set contains sheets grouped by subjects, and the other groups and arranges them by contract number and customer.

M-250
FIELD LABOR UNIT COST RECORD

Contract No._____ Contract Period_____ Total Contract Field Labor $_____

Customer_____

Location_____

Character of Work_____

Job Code	Description	Quantity	Unit	Total Man Hrs	Total Amount	Average Hrly Rate
		Unit Field Labor Cost			per	

Describe construction methods, complete equipment data, conditions of erection, plant used, and items influencing cost:

Description_____ Code Group_____

DAILY, WEEKLY, MONTHLY records tell a running story of an entire job, become invaluable for figuring unit costs and provide an immediate history of the job as soon as it is completed. Well-planned forms do not burden supervisors on the job.

Garden State Road Materials, Inc.

"HAVEN'T BURNED A BEARING SINCE USING C-800," says "Doc" Dougherty. "We have saved a lot of money on engine life with C-800."

FEEDING ROAD OIL TO "SPREADER": In addition to C-800 motor oil, Garden State uses only Cities Service road oil.

"HIGHLY RECOMMEND CITIES SERVICE TO ANY FLEET OPERATOR," says Dougherty, after 30 years' maintenance experience with buses, trucks and construction equipment.

ANOTHER ROAD NEARS COMPLETION

Pictured above is a "spreader"—one of the 25 pieces of heavy road equipment constantly in use for the Garden State Road Materials, Inc., Cedar Grove, New Jersey. Although these trucks operate throughout four states, often under the severest conditions, William "Doc" Dougherty, president of the firm, reports that since using C-800 motor oil—"The rings do not stick, there is no sludge or varnish and we use less oil. C-800 motor oil is the best I have ever used."

Learn how you can increase the performance of *your* trucks with C-800 heavy duty motor oil. For details, contact your nearest Cities Service Office or write Cities Service Oil Company, Sixty Wall Tower, New York City 5, New York.

CITIES SERVICE

QUALITY PETROLEUM PRODUCTS

COST CONTROL . . . Continued from page 116

money can be saved; on possible sources of trouble; and on what advance plans, if any, have been made to cope with and overcome difficulties foreseen as a result of a careful objective examination of field conditions, possible interferences, and concealed hazards.

The general superintendent should have sufficient time for proper briefing of the job superintendent who should clearly understand how much money has been allotted for field labor, equipment rentals and materials for temporary purposes, according to construction accounting codes. The job superintendent should then study the budget for labor, tools, construction equipment, temporary facilities and consumable materials and give his opinion to the project engineer and general superintendent as to whether or not the budget is sufficient. If his conclusions are unfavorable, an immediate investigation should be made to clarify the reasons and develop corrective action.

Prior to start of the job, the superintendent should understand what reports are needed to develop useful unit cost information. More about this under item No. 7, Cost Analyses.

2. Job Scheduling

When the project engineer prepares a job schedule, he should consult the general superintendent or his delegated assistant. Allotment of time is equally as important as allotment of money. Since the project engineer sets up the budget, he should also set up the schedule, subject to approval by the general superintendent. A firm bid should be accompanied by a reasonable promise of completion time, as indicated in the properly approved schedule, and not a hopeful time estimate.

The period allotted for field construction should include sufficient preparation time to allow the general superintendent to examine requirements, develop methods, select the job superintendent and, with the assistance of the project engineer, help him toward a clear understanding of the job problems. This includes time to review the previously prepared schedule and collaborate with the project engineer and general superintendent in establishing a realistic construction schedule, prior to beginning work in the field.

3. Timely Expediting

(a) FOREIGN DRAWINGS, Bills of Material and Erection Instructions

Insufficiency and sometimes total lack of manufacturers' drawings, bills of material or erection instructions are a handicap to the job superintendent resulting in money loss due to delays, extra telephone calls, and lost motion by him and other employees.

One solution is to specify on each requisition for equipment, a stated number of erection drawings, erection instructions and bills of material to be delivered to the project engineer. If the vendor supplies part of the equipment from other sources, a master bill of material should be required. The project engineer should actively follow up on documentary requirements from vendors and see to it that certified copies are sent to the field as promptly as possible.

(Continued on page 121)

(Advertisement)

HERE'S HOW TO RESTORE CONCRETE FASTER, BETTER, at LOWER COST!

BONDACTOR Concrete Gunning Equipment Pays Its Way All the Way!

PAID FOR ITSELF IN 90 DAYS! This portable rig, utilizing Bondactor and Mix-Elevator Equipment, and used by the Kentucky Highway Department to maintain concrete bridges in the state, paid for itself in 90 days.

Any way you figure it, a BONDACTOR is a wise investment! Why? Because this versatile equipment starts paying you back on the first job . . . and never stops! The secret? Versatility! Bondactor equipment can be used in so many ways to maintain, restore concrete, for waterproofing, stuccoing, cleaning of building interiors and exteriors, insulation, fire-proofing, wet and dry sandblasting.

Any of these jobs can be done more economically for you because Bondactor gets the job done for you faster, better, at lower cost!

Why don't you write, wire or phone to get all the facts, complete specifications and prices on the three Bondactor models. Please state intended uses and materials to be gunned. Do it now!

"THE ONLY WAY" to repair spalling on this Morgantown, North Carolina dam, according to Duke Power Company engineers, was with concrete shot from Bondactor equipment.

Air Placement
EQUIPMENT COMPANY
1008 West 24th Street
Kansas City 8, Missouri

See them now!

NEW FORD T-800
Tandem-Axle BIG JOB.
New 170-h.p. *Cargo King* V-8. New Power Steering standard.

New FORD TRUCKS for '54

featuring TRIPLE ECONOMY

Big new savings in the 3 most important truck saving areas

1. NEW Gas-Saving, Low-FRICTION, Overhead-Valve, High-Compression, Deep-Block Engines in all Models!

Now, you get a gas-saving LOW-FRICTION engine in *any* Ford Truck you choose—from 115- to 170-h.p.! New short-stroke design cuts internal friction loss up to 33%, liberates up to 23% more *usable* power.

2. NEW Driverized Cabs! NEW Power Steering! NEW Power Brakes! Fully Automatic Fordomatic Drive!

Ford's 3-man Driverized Cabs cut fatigue! New *Master-Guide Power Steering* standard on T-800 Series, optional on most other BIG JOBS, Power Braking* for ½-ton, Fordomatic* for all light duty models!

3. NEW Money-Saving Capacities! Over 220 Models! New 6-wheelers! The one right truck for your job!

Ford's expanded new truck lines include brand-new Ford Tandem-Axle BIG JOBS, up to 60,000 lbs. G.C.W., and two more giant new Ford Cab Forward BIG JOBS rated up to 55,000-lbs. G.C.W.!

*Available at extra cost.

V-8 and SIX!

5 GREAT TRUCK ENGINES!

All Low-FRICTION!
All High-Compression!
All Overhead Valves!
All Deep-Block design!

NOW! **Mightiest concentration of power per cubic inch ever built into any truck engine line! Only FORD has it!**

For the power they develop, Ford's new truck engines have *less cubic inch displacement* than any other truck engine line. The Ford 317 cu. in. *Cargo King* V-8 develops its 170-h.p. from as much as 96 cubic inches less displacement. Smaller-displacement engines normally need less gas! That's why Ford *concentrated power* is a big factor in new Ford Truck *TRIPLE ECONOMY!*

(b) MATERIAL SHIPMENTS

Purchasing departments have been complaining for years, and justly so, about indefinite or unrealistic delivery dates on purchase requisitions, or even in telephoned requests.

Discourage use of the term "soon as possible" in requisitions or telephoned requests to the purchasing department, because, all factors considered, it may lead to unnecessary loss of money, due to buying from the nearest available source rather than from the most economical one. It is easy to say: "Mac, the water pump on my air compressor has gone bad, and is likely to give out at any moment. I need a new one Friday, so I can install it Saturday when the works are down. This is short notice, but please do the best you can." Mac now has a clear picture and will act promptly. However, if the water pump is only slightly worn, and spare parts are needed to insure against a possible breakdown, then the requisition should show a calendar date for delivery on the job which allows sufficient time for processing papers, buying, shipment and transit.

When such well-considered delivery dates are shown on requisitions, the purchasing department, in turn, should promptly notify the originator of the requisition when (1) the requested delivery date cannot be met, and (2) re-scheduled delivery (not shipment) can be expected, allowing for estimated time in transit. In absence of such notification, the person requesting the material has every right to assume that the shipment will arrive on time.

Money also can be saved by estimating approximate total requirements of consumable materials prior to the start of field construction, and placing advance requisitions which will give the purchasing department sufficient time to buy economically. Field purchase of lumber in small lots is rarely a bona fide emergency and can be avoided by estimating requirements for forms, temporary buildings, temporary decking, scaffold planks, runways, etc. during the planning period. Similarly, other materials can be estimated in advance, such as concrete, piping materials for temporary services, erection bolts, shim stock, form ties, wire, oxygen and acetylene, welding rod, etc. Requisitioning such materials is properly a responsibility of the general superintendent, but items of consumable material within his responsibility, should be specifically defined, as also the items within the responsibility of the project engineer.

(c) EXPEDITING PROCEDURE

As soon as a bona fide construction schedule is established, the job superintendent should check with the schedule for specified delivery dates on all purchase orders. If any dates need to be advanced he should so advise the project engineer who will inform the purchasing department. This should be done before the start of field operations. If some of the subsequent replies are unfavorable to advancement, it may become necessary to revise the schedule after field work has started—a responsibility of the project engineer, subject to concurrence by the general superintendent.

4. Timely Use of Labor and Mechanization

Most job superintendents are probably well educated in the

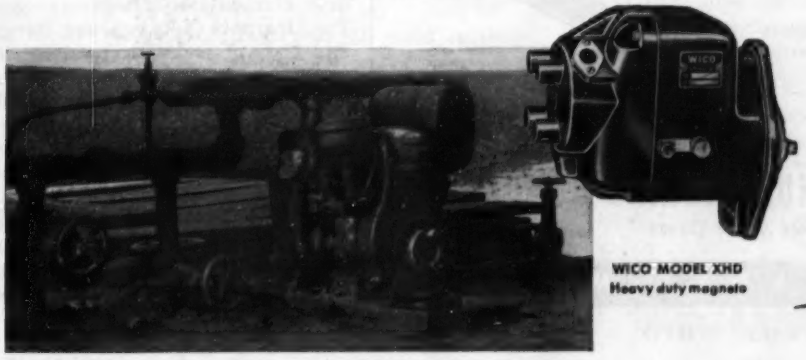
DEPEND ON WICO MAGNETOS
to keep engines working

For ignition that won't let you down, take a tip from leading manufacturers of gasoline-powered field equipment. They know how important good ignition—so they choose Wico magnetos. For example, the Gorman-Rupp pump shown below is powered by a Wisconsin engine, many of which are equipped with Wico magnetos.

No matter how wet or hot the weather—how dirty or dusty the service—Wico magnetos keep feeding a hot spark. They're built to take tough duty, with features like one-piece cast rotors, amply-sized tungsten contacts, and weatherproof coils.

You can put an end to ignition worries, by specifying Wico magnetos on your new equipment, and by replacing old magnetos with Wico on every repair job.

Write to us today for complete facts. And see your nearby Wico Authorized Service Station for experienced attention to your ignition problems.



WICO MODEL XHD
Heavy duty magneto

WICO ELECTRIC CO.
West Springfield, Massachusetts
Manufacturers of Wico "Autostop" and the "Puff-A-Lite" Automobile Lighter

WICO

If you have a particularly tough maintenance or construction problem, if you have to move material and move it fast . . . whether it's gravel, dirt, shale, snow or rocks . . . specify a SHUNK blade on your equipment. They're built of top-quality steel and backed by years and years of experience in manufacturing blades to take a man-sized bite out of any rugged problem you might have.

SHUNK blades are endorsed by original equipment manufacturers, contractors and distributors in all parts of the world for their quality, dependability and ability to take the most rugged punishment.

Literature on request.

3,000 DIFFERENT SPECIFICATIONS

Shunk MANUFACTURING COMPANY
In Our 99th Year

BEST BLADES MADE

BUCYRUS, OHIO

timely use of journeyman labor. They all know that one man too many on a particular operation is unnecessary expense. There is another aspect which affects the profit picture. If the job is large enough to justify hiring a general foreman in a particular craft, it will save money to employ a known first-class producer in the beginning, rather than to wait until you have to hire one whose qualifications are vague. Therefore, force requirements should be determined in advance.

A requirement that the superintendent sign each weekly payroll keeps him aware of the relative magnitude of expenditure for labor. He also should know the charges each week for the use of construction equipment. Such a report will prevent equipment charges from getting out of hand.

5. Waste Elimination

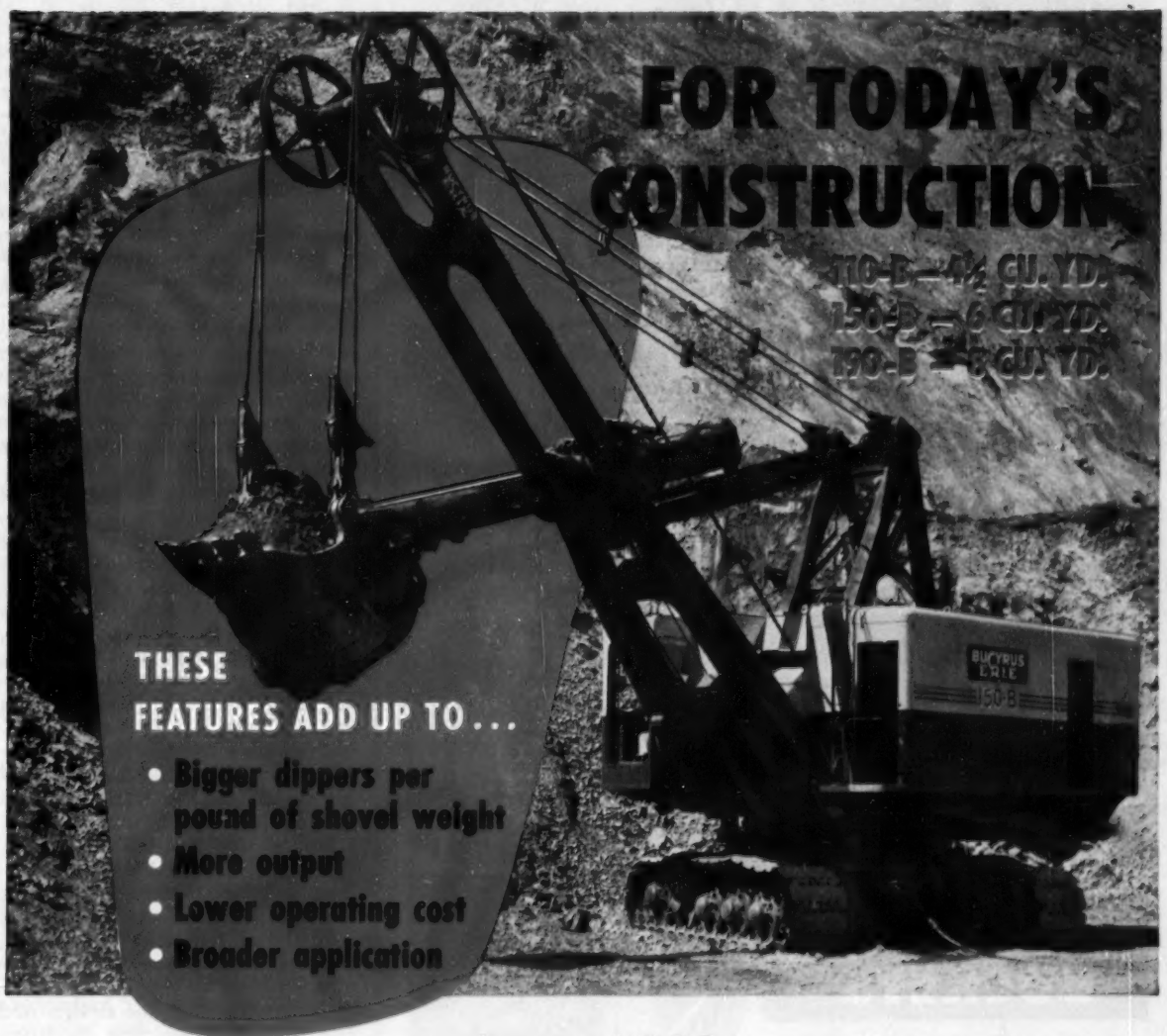
Campaigns to eliminate waste have been conducted by industry for more than 20 yr. The accent usually has been on reducing expenditures for materials by exercising closer (sometimes arbitrary) control over them. Periodic readjustment of stock, spare parts and tool inventories, plus day-to-day vigilance by local supervisors in controlling use of materials, can effect substantial savings.

Considering waste elimination in the larger sense, waste of time can be more harmful to the exchequer than waste of materials, but it is wrong to assume that you should throw caution to the winds in using material, just for the sake of saving time. An economical balance of the use of time, labor, materials and mechanization cannot be achieved without careful planning, job scheduling, and timely expediting.

Careful checking in the engineering stage of the job can also help eliminate waste. In one case the clearance between the flange and body of a cast-iron valve was insufficient to permit the use of standard nuts on the bolts—the job was delayed until half-thickness nuts could be obtained. In another, the stud bolts supplied by a pipe fabricator were too short to connect pipe to flanges on equipment. Whenever there is a division of responsibility between manufacturers, so far as inter-connection details are concerned, it pays to do

(Continued on page 124)

Tomorrow's Shovels


FOR TODAY'S CONSTRUCTION
110-B — 4½ CU. YD.
150-B — 6 CU. YD.
190-B — 8 CU. YD.
THESE FEATURES ADD UP TO...
• Bigger dippers per pound of shovel weight
• More output
• Lower operating cost
• Broader application
BUCYRUS ERIE
150-B

Bucyrus-Erie's progressive design brings the modern shovel front end to the construction industry.

Only Bucyrus-Erie offers these features in front end equipment on heavy-duty shovels.

BOOM— Two section — light upper section, rugged lower section. No excess weight. Weight and strength concentrated where needed and close to center of rotation.

Lower boom section part of main machine, through twin strut connections to A-frame. Boom feet wide spread — no sway braces or cables. No boom jacking.

TYPE OF HOIST— Twin dual, single-part ropes, one attached to each side of dipper. Power automatically concentrated where needed on dipper lip to break through bank obstructions. No dipper bail.

SADDLE BLOCK— Cylindrical. Rubber cushioned against impact during fast plugging of swing. No binding with flexed dipper handles.

HANDLE— Single, tubular, one-piece, can rotate in saddle block. No handle twist possible.

CROWD MACHINERY— Located on revolving frame, close to center of rotation. Position reduces swing inertia. Accessible, protected.

TYPE OF CROWD - Quiet, positive, independent twin rope crowd and retract. Adapts itself to tubular handle rotation — low friction — less crowd power required.

CONVERTIBILITY— Shovels fully convertible to draglines of the independent motor type — no operating clutches or brakes.

There are many more reasons why these modern Bucyrus-Eries with Ward Leonard Variable Voltage control are the finest heavy-duty excavators ever built. Get the full story today.

BL53C

BUCYRUS ERIE South Milwaukee Wisconsin

LONG TRENCHES OR SPOT EXCAVATIONS
SHAWNEE SCOUT DITCHER
MODEL 70 DIGS 12 FEET DEEP!

Owners themselves report satisfactory digging at this depth with a reach of 14 ft. The operating arc is throughout 150° and the loading height is 8 ft. 6 in. Installation or removal from the tractor may be made in less than 20 minutes.

SHAWNEE

SHAWNEE HYDRO-CLAM

Minimum hole 36" square for spot excavations. Digs straight down. Forms square corners.

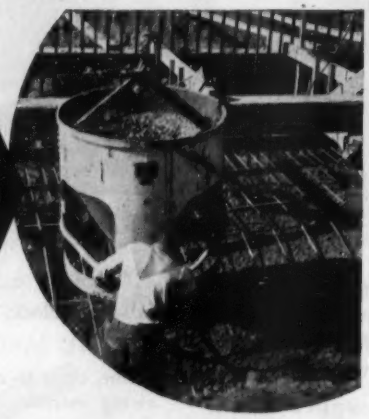
The answer to heavy digging and spot excavations. 4½ tons of pressure is applied to both halves of the clam.

- Digs 8½ feet deep
- Dumping height up to 7½ ft.
- 24", 30" and 36" with clam buckets
- Adjustable outriggers
- Interchangeable

SHAWNEE MANUFACTURING CO., INC.
1947-55 No. Topeka, Topeka, Kansas

BLAW-KNOX

CONCRETE BUCKETS



speed work
cut concrete
placing costs

WHETHER you're placing fluid or dry concrete, big aggregate or normal stone, any specification—there's a size and type of Blaw-Knox Concrete Bucket to suit your needs:

Blaw-Knox Roller Gate Controllable Discharge Concrete Buckets for normal or low slump concrete for general construction work.

Blaw-Knox CAC Concrete Buckets with air operated clam gates for low slump mass concrete specifications.

Also, Tremie type buckets for placing concrete under water. See your nearest Blaw-Knox distributor for details.

BLAW-KNOX COMPANY
BLAW-KNOX EQUIPMENT DIVISION
Farmers Bank Building, Pittsburgh 22, Pa.

BLAW-KNOX

COST CONTROL . . .

Continued from page 122

additional checking to eliminate possible misfits.

6. Protective Arrangements

We have talked about waste elimination. Accidents causing human injury are the worst form of waste on a construction job. Restricting the use of labor and materials, just for the sake of saving money, is not economy if the restriction fails to protect human beings (employees and the public) from hazards which can be eliminated. We all know the beneficial results of aggressive accident prevention training. However, the job budget for safety should not be restricted merely to cover the traveling expenses of the safety supervisor.

Protecting property from loss by fire, theft, windstorm, flood, freezing, corrosion and carelessness is an immediate responsibility of the job superintendent. The safety supervisor customarily conducts fire protection training on each job, which is very important. However, these two men should not be expected to carry the entire burden of taking steps to prevent losses.

Advance plans to overcome possible troubles, should include maximum flood stage (if the plant is near a river), unusual hazards, facilities for unloading freight, heating temporary buildings, accident prevention, fire prevention, fire fighting facilities, access roads, security of buildings and fences, parking area, and watchman service.

Remember that the design and selection of temporary facilities, construction equipment and tools should always be done with one eye on productivity and the other eye on protecting the job from accidents and other losses. This is not difficult.

7. Cost Analyses

Records concisely compiled on a current basis provide facts for periodic checking and final evaluation at the end of the job. They also contribute to closer estimating in the future. Experience says, get unit costs. However, unit costs are useful for comparison only for operations which can be standardized. Non-standardized costs can be made useful for estimating purposes by preparing a report at the end of the job, which contains concise descriptions of operations

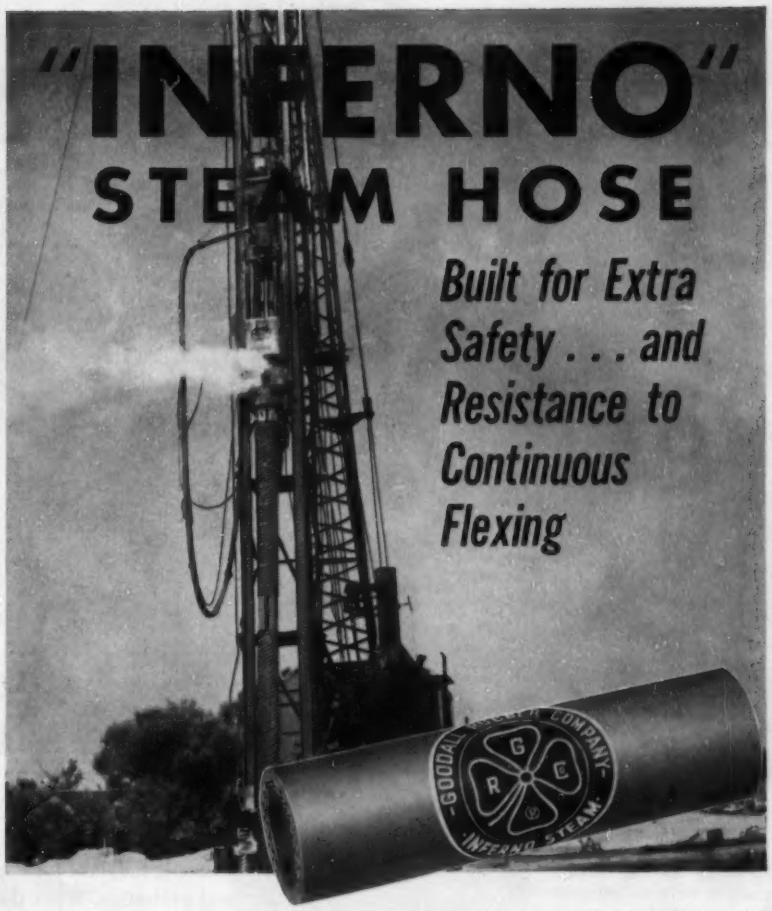
covered by specific accounting codes. Furthermore, the gainful accumulation of useful information for developing unit costs and a concise final analysis should be reported currently to insure getting it in the end, because the exigencies of the construction business sometimes necessitate the transfer of personnel immediately.

Some engineers object to the issue of monthly cost summaries as being too infrequent to enable timely corrective action, if such need is indicated. They favor a weekly report covering weekly and cumulative field labor costs in man-hours and money, by codes, with per cent completion (estimated by the superintendent) entered opposite each item. Adjacent thereto will be two columns, to be filled in at the home office, for corresponding entries of total field labor forecast and field labor allotted in the estimate. The reverse side of the sheet can be arranged for a weekly report of equipment hours and charges, by codes, with a separate code for idle time due to rain, repairs, interruptions, union rules, and use factor.

Cards Will Do It

In order to reduce field clerical time in connection with the proposed weekly report, the information can be compiled on 5x8-in. indexed cards.

In order to analyze efficiently, collate and present for review the completed cost summaries at the final accounting of jobs, the data can be entered on loose leaf ledger-type sheets for filing in visible record binders. These binders facilitate review of cost data by project engineers and management when estimating and bidding a new job. One binder would contain sheets grouped by subjects, such as boilers, boiler feed pumps, draft fans, gas ducts, turbo-blowers, excavation, concrete, 2½- to 8-in. pipe erection, 20-in. pipe welding, steel framework for pipe, etc. The other would contain the duplicate sheets, grouped and arranged by contract number and customer. The sheets would be overlapped so that any one sheet could be quickly inspected by flipping over the ones adjacent to it. Use of the sheets can be confined to coded items of standardized unit labor cost and items of non-standardized labor cost which may be accompanied by a concise and significant description of construction operations involved in that particular coded item.



Every detail of "INFERNO" construction contributes to the outstanding strength, durability and safety of this heavy-duty steam hose. Many a pile-driving record has been made with "INFERNO" on the rig; and it will prove equally efficient and economical in all other steam services.

"INFERNO" specifications include high-temperature tube; multiple-layer, braided steel wire carcass; red wear- and weather-resistant synplastic cover. Sizes ½" to 3", inclusive, in maximum lengths of 50 feet.

Construction of the braided wire carcass permits steam to escape without bursting the hose, should it be severely damaged in service.

Contact Our Nearest Branch for Details and Prices

GOODALL RUBBER COMPANY

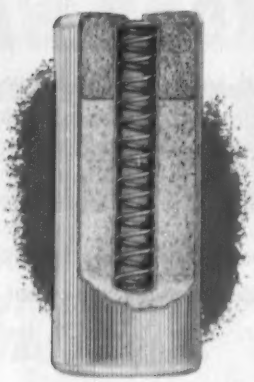
Est. 1870

GENERAL OFFICES, MILLS and EXPORT DIVISION, TRENTON, N. J.

Branches: Philadelphia • New York • Boston • Pittsburgh • Indianapolis • Chicago • Detroit • St. Paul
Los Angeles • San Francisco • Seattle • Spokane • Portland • Salt Lake City • Denver
Houston • Goodall Rubber Company of Canada, Ltd., Toronto • Distributors in Other Principal Cities

PROTECTED

right from the start



Starting time is toughest for engines, too. That's when they really need protection. When the lube oil is cold and viscous many filters won't accept it . . . send it through the by-pass without any filtration. Then, if the oil has been contaminated, or any part of the engine fails, there is no protection for critical surfaces. The power plant goes down . . . and repair costs go up.

You can use Winslow full-flow filters with complete assurance that oil will be filtered . . . Hot or Cold . . . right from the start. Winslow's exclusive CP* design provides automatic pressure regulation within the element, so that oil is by-passed only under emergency conditions. CP construction gives greater porosity near the outer edge, so that large particles are trapped first. Smaller contaminants are removed as the oil passes through denser filtering media near the center. This progressive filtration is clearly superior to any element that traps all sizes of particles on the outer surface, which becomes clogged and reduces the capacity of the filter.

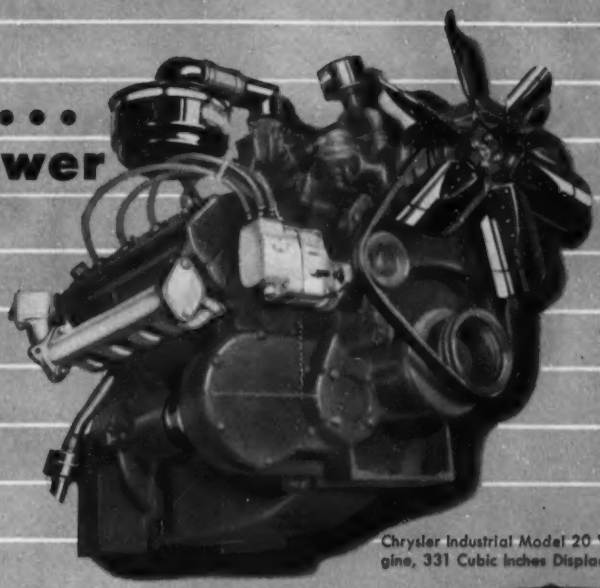
**CP is the title of a helpful and informative booklet available from Winslow Engineering Company. Why not write today for your copy?*

WINSLOW FILTERS

Winslow Engineering Company 4069 Hollis Street • Oakland 8, California

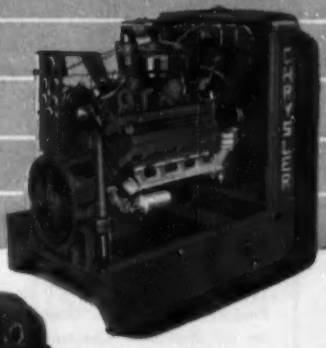
For greater PAY in your PAYloads... specify *CHRYSLER* power

Chrysler Industrial Model 16 Engine, 265 Cubic Inches Displacement.



Chrysler Industrial Model 20 V-8 Engine, 331 Cubic Inches Displacement.

Chrysler Open Power Units include the complete engine, skid base, radiator and grille, instruments and instrument panel, flywheel and flywheel housing. (Pictured is V-8 Open Power Unit, which also includes a twenty-five gallon fuel tank.)



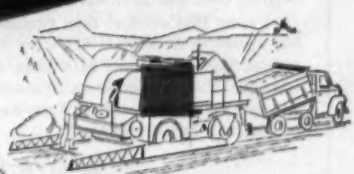
Chrysler Enclosed Power Units have the complete engine, instruments, instrument panel, skid base, fuel tank, radiator and grille, as well as fully enclosing sheet metal—side panels and hood top panel.

There are ten Chrysler Industrial Engines and Power Units, from 217 cubic inches to 413 cubic inches displacement. All of them operate with gasoline, natural gas or L-P gas fuels.

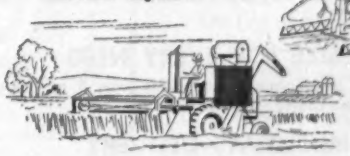
True to the Chrysler tradition, these engines, both In-line 6 and V-8, are among the most advanced design, best engineered and most powerful engines available today in their power ranges. Yet, thanks to famed Chrysler Research, they are constructed of lightweight, highly alloyed steels and allow amazing horsepower to weight ratios.

They are, therefore, ideal engines for most any equipment, regardless of size or silhouette. Let our nearest dealer give you more details, you'll be agreeably surprised to know how inexpensive Chrysler Power—*equipped to meet your specifications*—is . . . that's because Chrysler production facilities and manufacturing know-how allow us to custom-equip engines and make them available at mass-production prices.

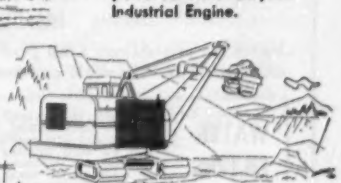
Install Chrysler with confidence. Our nationwide dealer organization assures you good service and fast parts availability. If you prefer, write us: ***Dept. 92, Industrial Engine Division, Chrysler Corporation, Trenton, Michigan.***



Street Paving Machine—powered with Chrysler Industrial Engine.



Farm Combine—powered with Chrysler Industrial Engine.



One-Half Yard Shovel—powered with Chrysler Industrial Engine.

Fork Truck—powered with Chrysler Industrial Engine.

CHRYSLER
Industrial Engines

HORSEPOWER ***WITH A PEDIGREE***

Marvel Synclinal Filters Keep Hydraulic Oil CLEAN!

SUMP TYPE

LINE TYPE

"After several months use we have checked the hydraulic systems of our machines and although they have worked in extremely dirty conditions, the hydraulic oil is clean."

This is the report from Mr. Harvey A. Martin of Ottawa Steel Products, Ottawa, Kan. Marvel Synclinal Filters are now installed on all Hydraulic Construction Equipment produced by this company.

FOR DEPENDABLE PROTECTION ON ALL HYDRAULIC AND LOW PRESSURE LIQUID SYSTEMS

OVER 400 OTHER ORIGINAL EQUIPMENT MANUFACTURERS of hydraulic and other machines with low pressure liquid circulating systems install Marvel Synclinal Filters as standard equipment. They have recognized the superiority of Marvels BALANCED Synclinal Design which provides that all-important balance between maximum ACTIVE filtering area and sufficient storage capacity for filtered out particles.

They know that users of their equipment will obtain longer periods of efficient, productive operation at absolute minimum in maintenance "down-time."

Marvel Synclinal Filters, both sump and line types, may be disassembled, cleaned and reassembled by any workman in a matter of minutes. Line type operates in any position and may be serviced without disturbing pipe connections. No spare or replacement parts to purchase or carry in stock.

A SIZE FOR EVERY NEED

Available for sump or line installation in capacities from 5 to 100 g.p.m. Choice of monel mesh sizes ranging from coarse 30 to very fine 200.

IMMEDIATE DELIVERY

Marvel not only delivers a top grade filter in both quality and performance, but delivers IMMEDIATELY—shipments are made the same day as orders are received, if desired.

WATER FILTERS In response to the great demand, we have adapted both our sump and line models for use in all water filtering applications. No changes have been made in the basic synclinal design.

MARVEL
ENGINEERING COMPANY
625 W. Jackson Blvd., Chicago 6, Ill.
Phone: Franklin 2-4431

MARVEL ENGINEERING COMPANY CME2
625 W. Jackson Blvd., Chicago 6, Ill.

Without obligation, please send me complete data on Marvel Synclinal Filters as follows—

CATALOG #106 FOR OIL FILTERS

CATALOG #300 FOR WATER FILTERS

Name .....

Address .....

Company .....

City ..... State .....

What the READERS

A TWO-PART EDITORIAL appearing in the August and September, 1953, issues of CONSTRUCTION METHODS AND EQUIPMENT, entitled "One United Construction Union," has resulted in a flood of letters to the editor. Here is a sampling.

Satisfactory in Open-Shop Operations ...

Your editorial in the August issue of your magazine is the most interesting I have read on this subject. Some of the procedures you have suggested are the same that we have found so satisfactory in open-shop operations. For instance, we shift men from operation to operation, and normally many of them for almost the entire duration of the project.—**Building Contractor**

Changes Will Be Made ...

Whether or not Mr. Richardson has offered the logical answer . . . his advocacy is eloquent and important . . . thoughtful men in the ranks of organized labor are beginning to question the validity of the craft system under existing conditions. It behooves contractors, as the employers in the nation's greatest industry, to ponder this question with the same earnestness with which Mr. Richardson and others have approached it.

Perhaps he has the logical answer. Perhaps, some may feel, he has only a part or none of it. But the situation cries loudly for improvement and when changes are made—and here it seems highly probable that Mr. Richardson is right in declaring that changes WILL be made—contractors should have a voice in shaping them and should be determining now what that voice will say.—**Central Constructor, Oct. 1953, (Iowa AGC)**

Ahead of the Procession ...

If you care to refer to the invaluable book "Creators of Wealth" you will find that I suggested that "consolidation of construction craftsmen into the 'Mortar, Woodworking, Metal, Equipment, Pipe, Wire and Finishing Trades,' would eliminate waste in time and travel of our workmen." Since I suggested that in 1937, some progress has been made by the various unions. Their title of Building Trades has been expanded to Construction and Building Trades. The plumbers and steamfitters have consolidated into a single union of pipe trades. When I suggested the partial consolidation then, it was looked upon with quite

THINK...

some misgivings. Now, however, you are willing to go the full route. As usual you are ahead of the procession. I hope you will live long enough to see it fulfilled.—**A. P. Greensfelder, Consulting Constructor, St. Louis, Mo.**

Determine Wages by Point System ...

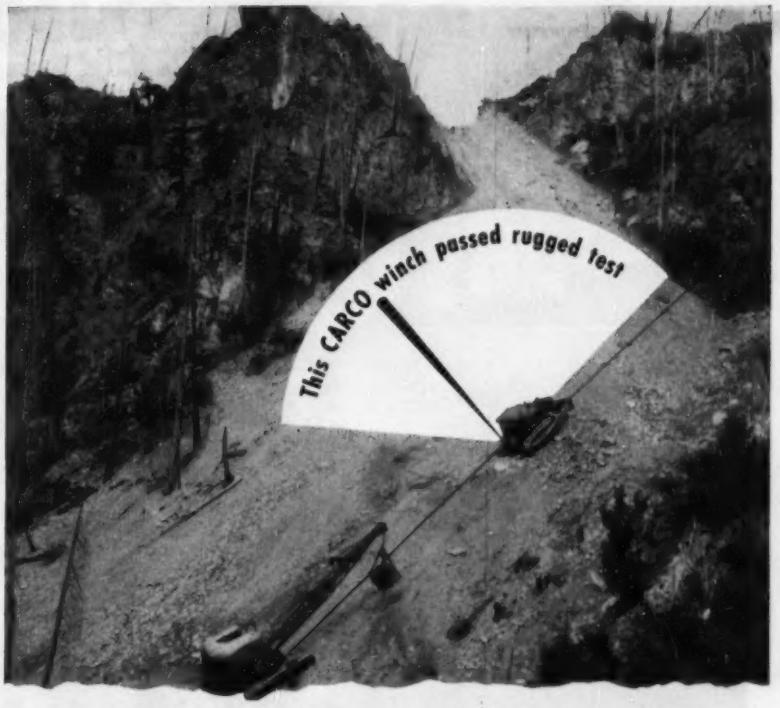
Congratulations . . . I would like to add to this idea an equitable method of determining wages by classifying jobs on a point system. Points could be awarded from a number of categories developed and agreed upon by parties interested, such as education needed, skill needed, responsibility for equipment, dependability for accuracy required, disagreeable working conditions or surroundings, dress requirements, etc. . . . E. T. Hier, Personnel Director, City of Fresno, City Hall, Fresno, Calif., has devised such a system and I suggest you contact him for a copy of his thesis.—**Edgar C. Smith, Office Engineer, City of Fresno, City Hall, Fresno, Calif.**

Deserve Endless Credit ...

Your editorial in the August issue is one which should have been written a long time ago. Nevertheless, you deserve endless credit for expressing the words in writing, which have doubtless been on the minds of countless contractors and businessmen who have been obliged to live with this economic monstrosity, this standing joke of the age, trade unionism. Your article is in fact the first one we have found which touches directly upon the utterly ridiculous rules, methods, tactics which are a part of this organization.

Whether or not the "One United Construction Union" is the answer, the fact still remains that Trade Union is unworkable in a modern economy. It favors a segment of our population by reason of its power, and it penalizes directly or indirectly those who have neither the wish nor the desire to become a part of its machinations. It has been placed in power by political expediency and is living on borrowed time by virtue of its accumulated wealth and unspent force, to say nothing of its perpetuation by a wartime economy.

Although we cannot agree with some of your conclusions, with respect to the solution in the form of another union, we rejoice that these words have been written as a stimulus for those who have been wish-thinking about the end of this era of trade union domination.—**Carl O. Schneider, President, Carl O. Schneider Corp., Milwaukee, Wis.**



CARCO winches held fast when slippage meant disaster

... on tough Alberta to Vancouver pipeline job

Towing and holding heavy equipment on steep grades is a severe test of a winch brake. On the Model J Carco winch, the automatic, self-energizing brake will hold any load the winch can pull. It takes hold the instant tractor clutch is disengaged. Full braking power comes from high ratio leverage contracting the band on brake drum. Brake unit is reversible, permitting under- or over-wind free-wheeling. Brake release mechanism gives the operator complete load control at all times. The load can be checked at any point and even be "inched" down. Brake is enclosed, protecting it from the elements or external abuse.

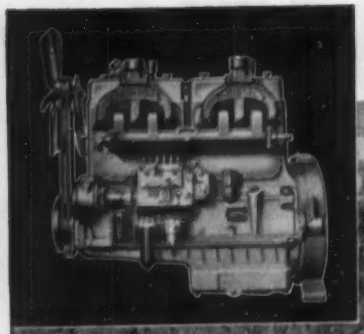
Mr. G. T. Guest, Assistant to Project Manager of Comstock Midwestern, Limited, builders of "Big Inch-by-Inch", says, "The job needed Carco winches for towing and holding heavy machinery on steep grades and even for holding men by life lines. Had a single winch failed, men and machinery would have been lost. We found Carco winches equal to everything we asked of them."

On top of hill a Model J Carco winch is winching the Carco J winch and International TD24 shown above up steep slope at Coquihalla Canyon while it, in turn, is winching up clam digger.

You can expect greater value from the leading producer, and get it from Carco, first in winch production. PACIFIC CAR AND FOUNDRY COMPANY, Renton, Wash. Branches at Portland, Ore., and Franklin Park, Ill.

WINCHES

FOR ALL INDUSTRIAL TRACTORS



WAUKESHA Super-Duty Six DIESEL (WAKD)—six cylinders, 6¼-in. bore x 6½-in. stroke, 1197 cu. in. displacement, peak hp 224 at 1600 rpm.

Cutting a new road—part of the Van Wyck Expressway connecting International Air Port with Flushing, Long Island—with a Waukesha Diesel powered Lorain shovel

Owner A. J. Orlando says...

"TO MOVE DIRT FAST and ECONOMICALLY—I prefer **WAUKESHA DIESELS** to any others I have owned or operated"

A. J. Orlando puts on the power—digging starts! It's that quick—that smooth! It's *fast recovery* that makes the Waukesha Diesel so different. "A. J." knows the difference. So do his operators. He owns not one, but three Waukesha Diesel powered 2-yd. Lorain shovels—all working for the A. J. Orlando Contracting Co., Whiteside, L. I., New York.

Plenty of other contractor-owners, and their operators prefer Waukesha Diesels. For the same reasons. More loads per minute. Extra power in the pinches. All-around dependability. And the lively, responsive acceleration, shock-free operation, and clean burning for fuel economy that you get with the patented spherical combustion chamber of the Waukesha Diesel. Check *all* its features—get Bulletin 1415.

231

WAUKESHA MOTOR COMPANY, WAUKESHA, WIS.
New York • Tulsa • Los Angeles

Tunnel Lore For Young and Old

THE PUBLISHERS of "Famous Subways and Tunnels of the World" (Random House, New York City) call this new $1.75 book "excellent reading for boys and girls aged 10 and up." They're right. And they were smart in not trying to put an upper age limit on those it should interest. For authors Edward and Muriel White (Ed's vice-president of Spencer, White & Prentis Inc., New York heavy contractors) have done a fine job of detailing the history, art, science and romance of tunnel driving.

History-Making Tunels

In this volume you will find the stories of the history-making soft-ground tunnels under the Thames River at London, where shields were first used. Also chronicled are the failures and successes of the Hudson River railroad tunnels, the first driven under compressed air. New York's Holland, Lincoln and Queens-Midtown tunnels are here, too, each with its own special problems.

Rock tunnels come in for their own share of glory: Mt. Cenis, St. Gotthard, Simplon and Loetschberg in the Alps; Hoosac in Massachusetts; the 85-mi Delaware Aqueduct in New York; and the Carlton in Colorado. Rapid - transit subway construction is also detailed.

And the Men Who Drove Them

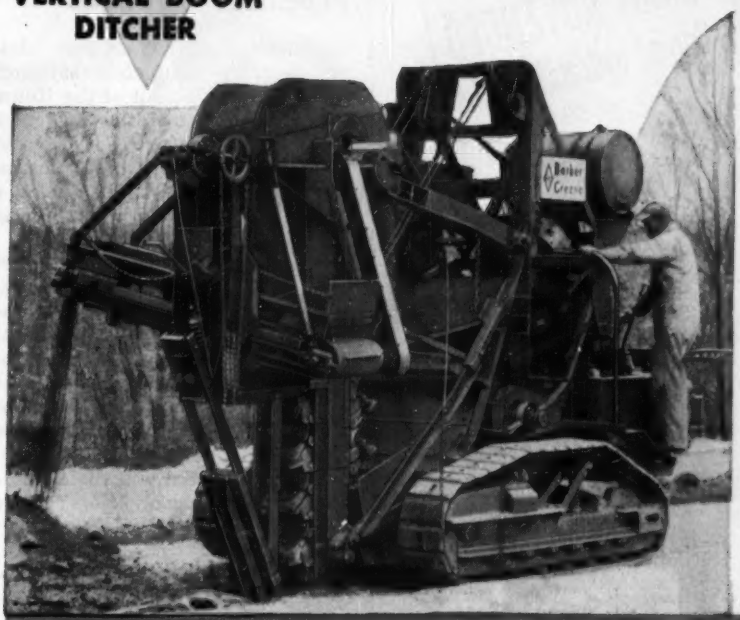
Just as the story of the tunnels is inseparable from the story of the equipment and construction techniques that made them possible, so with the men who drove them. There's Brunel, inventor of the shield; Greathead, who radically improved it; Haskins, who failed under the Hudson; and Jacobs, who succeeded; Sommeiller, who perfected the compressed-air drill; Cliff Holland, whose ventilating scheme made vehicular tunnels possible; and "Long John" Austin, who drove the 6 mi Carlton from one heading in less than 2 years.

Also included are stories of some lesser figures—Richard Creegan and Marshall Mabey, for example. In two separate mishaps they were blown out from tunnel headings, passed up through the silt and waters of New York's East River, and lived to tell about their weird experience.—H.T.P.

BARBER-GREENE HEAVY DUTY DITCHER

MODEL **44-C** VERTICAL BOOM DITCHER

for lowest cost per foot of trench in all weather



SAVE ON JOBS LIKE THESE:

- Highway Widening
- Sewer, Water and Gas Distribution
- Pipe Line Construction
- Airport Drainage
- Uncovering Joints
- Placing Conduit Tile
- Building Foundations
- Farm Tiling
- Grave Digging

DIGS CLEAN . . . leaves vertical walls . . . square cuts . . . eliminates most expensive handwork.

MILLING ACTION . . . closely spaced buckets pare small increments as a milling machine cuts metal.

OVERLOAD RELEASE . . . slips when overload occurs . . . automatically re-sets itself . . . no down time for replacing shear bolts, etc.

Only Barber-Greene offers so many proved ditcher advantages to save time and money on all trenching operations. For instance, the Vertical Boom means a compact, easily maneuvered machine: digs straight down, right up to walks, foundations, underground pipes, etc. . . . digs *all* the ditch . . . no expensive handwork required. The Vertical Boom stays *down* — the harder the digging, the harder the buckets hold it down. Cuts trench to 8'-3" depth, 24" wide.

Self-cleaning "kick-out" buckets operate in a vertical plane . . . produce the famous B-G milling action that cuts through coral, frozen ground, caliche and other formations that completely stop other ditchers.

Another time- and money-saving feature is the exclusive B-G overload release that slips on overload and automatically resets itself until the obstruction is removed or the operator stops machine—and then it re-sets itself for continued operation, protecting machine, hidden mains, cables, etc.

Plan to put the advantages of the B-G Model 44-C to work for you.

Barber-Greene BG

Aurora, Illinois, U. S. A.

Pick the right jack for the job

from the world's MOST ADVANCED line of hydraulic jacks

EXAMPLE: 50-ton model GB-11 fits into cramped quarters — is one-man operated. Note short handle. Following are other big features:

LIGHTNING LIFT — 30 and 50 ton models have a patented double pump. Only ONE pump beam. No shifting of the handle. Load is quickly contacted. Then the powerful load pump cuts in automatically.

PROTECTION — No accidental lowering — release valve is recessed in the base. Pumps are concealed — not exposed to damage.

GAUGE PLUG PROVIDED — It's easy to attach a gauge to measure the load on the jack —for testing, weighing, pressing to predetermined pressures.

The MOST EXTRAS — and the MOST COMPLETE line —1½ to 100-ton capacities

Major jack users soon discover the completeness of Blackhawk's line means you can quickly get the *right* jack for the job. And their experience has proved that the most dependable, longest lasting hydraulic jacks are built by Blackhawk. What's more — after a long productive life — it's easier and less costly to replace worn parts on a Blackhawk and get it back in full action in a hurry.

There are many reasons for these long-range advantages

- Over 50 well-equipped authorized repair stations assure repair service whenever you need it.
- 68% of all replacement parts are now interchangeable among the most popular Blackhawk models
- New designs give Blackhawk Jacks *even greater* dependability

So — *standardize* on Blackhawk Jacks now. Order from leading supply houses everywhere

Get this FREE "Idea Book" See how others do cost cutting tricks with Blackhawk Jacks. Write for 64-page "Idea Book" and catalog Blackhawk Mfg. Co., Dept J-2324, Milwaukee 1, Wisconsin

BLACKHAWK®

HYDRAULIC EQUIPMENT • HAND TOOLS

On-the-Job Contractor-Labor Relations

by LEON B. KROMER, JR.

The Administration Proposes Changes

NEITHER EMPLOYER nor labor groups were completely satisfied. Chairman McConnell of the House Labor Committee termed it a "moderate approach." Senator Morse said "unfortunately unsubstantial." John L. Lewis issued a statement saying, "a few piddling amendments . . ."

These opinions and quotes referred to the President's long-heralded special message to Congress recommending amendments to the Taft-Hartley Act. Senator Smith, Chairman of the Senate Labor Committee, has already introduced a bill incorporating the changes.

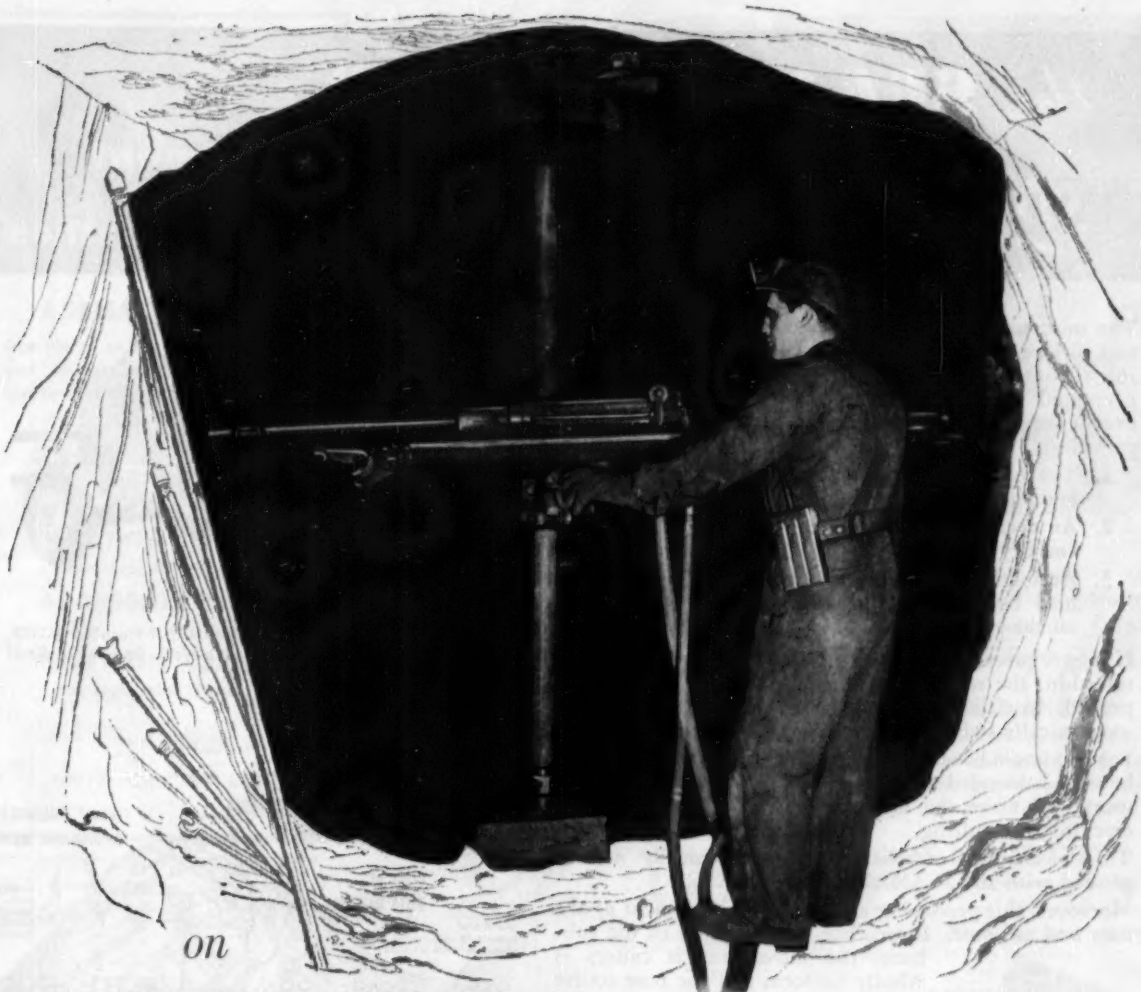
If enacted, what will the amendments mean to contractors? Here they are:

1. Less use of the injunction in secondary boycott cases. The President recommended that the General Counsel of the National Labor Relations Board be permitted to use his discretion on seeking an injunction in such cases. The law now makes it mandatory.

2. Relaxing the prohibition of secondary boycott to exclude strikes or "concerted action" against (a) employers doing "farmed-out" work for another employer whose employees are on strike, and (b) a construction employer who, with other contractors, is performing work on a project site. Under (b) for example, a picket line against a non-union contractor which ties up the work of other contractors on the job would not be considered a secondary boycott.

3. Permit contractors and unions to (a) negotiate collective agreements before men are hired, and (b) include in such agreements a union security provision requiring employees to join the union within seven days after hire. This is the Taft amendment (CM&E, Jan. 1953, p. 146) proposed in the first session of this Congress, which would get around the representa-

(Continued on page 135)



on

long hole drilling jobs...

get more footage per man-shift with CRUCIBLE

CA DOUBLE DIAMOND *Alloy Hollow Drill Rods*

Tungsten-carbide bits and heavy-duty rock drills have made deep-hole drilling possible. But just as important are the sectional steel rods that go between.

You can rely on Crucible's *CA Double Diamond* Alloy Hollow Drill rods to take the roughest jobs in stride . . . with less rod breakage . . . fewer lost bits. That's because they are manufactured to tool steel specifications, by Crucible — the leading producer of special purpose steels.

Each lot of *CA Double Diamond* is thoroughly tested by actual granite drilling. And each rod possesses a uniformly round, accurate hole that permits maximum water or air passage . . . an essential in successful long hole drilling.

For longer drill life and lower operating costs on your next long hole job, specify Crucible *CA Double Diamond* Alloy Hollow Drill Rods.

CRUCIBLE first name in special purpose steels

54 years of Fine steelmaking **HOLLOW DRILL RODS**

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

REX HIGH SPEED • TOOL • REZISTAL STAINLESS • ALLOY • MAX-EL • SPECIAL PURPOSE STEELS

the SEAMAN MIXER *STABILIZES* Base and Sub-Base Movement

... Saves Maintenance or Costly Reconstruction

The most usual causes of base course and surface failures are weak spots in the subgrade. These can readily be prevented with a low cost stabilization of the sub-base soils. This process provides:

1. The elimination of coarse and fine pockets of soils.
2. An even "blending out" of wet and dry spots.
3. An increase in the uniformity of load bearing value throughout all the subgrade.

The SEAMAN Self-Propelled MIXER. 7 ft. mixing width. Gasoline or diesel powered.

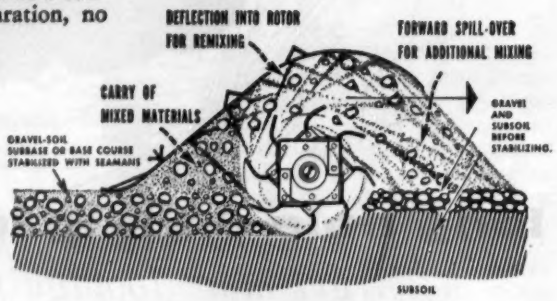
If aggregates or binders are also mixed-in, the stability is greatly improved. In either case the subgrade materials are mixed, blended and mechanically stabilized for maximum support of the base.

For maximum benefit, the aggregates *of all sizes* of the base course must be mixed, blended and interlocked. Thus the finer sizes act as a soil-mortar to unite the mixture into a solid mass. No separation, no cracking, no faulting.

This mechanical stabilization is economically accomplished with the SEAMAN PULVI-MIXER.

Moreover, this processing also *stabilizes movement of the base and sub-base.* If weather action occurs in the sub-base, the movement it causes is wholly uniform and the base course flexes with it.

A 12-page Bulletin describing the Self-Propelled TRAV-L-PLANT and the Self-Propelled MIXER is yours FREE on request. It also shows how gravel segregation occurs and how it may be corrected. Ask for Bulletin TPS. Send a postcard today.


DEFLECTION INTO ROTOR FOR REMIXING
FORWARD SPILL-OVER FOR ADDITIONAL MIXING
CARRY OF MIXED MATERIALS
GRAVEL-SOIL SUBBASE OR BASE COURSE STABILIZED WITH SEAMANS
GRAVEL AND SUBSOIL BEFORE STABILIZING.
SUBSOIL

PREVENT THIS BY STABILIZING THE SUB-BASE

Moisture has entered the unstabilized sub-base causing a weak spot. This would not occur if sub-base had been stabilized to uniformity and high density.

The expansion through freezing or the breakdown of the sub-base through the disintegrating effect of moisture is reflected in a localized movement of the materials above in the base.

Complete breakdown of the base course above the sub-base failure has started a chain reaction as more moisture will permeate the fault and establish repeated breakdown cycles along the width and length of the pavement.

SEAMAN MOTORS, INC. 280 N. 25th STREET • MILWAUKEE 3, WISCONSIN

ASPHALT PLANTS

Complete units for maintenance and moderate contract paving. Sizes—4, 8, 15, 30 tons per hour.

Other Products

CONCRETE VIBRATORS
Gasoline Engine and Electric Motor Driven Models

HEATING KETTLES
for Asphalt and Tar

AGGREGATE DRYERS
for Stone and Sand

FRONT END LOADERS
for Industrial Tractors

White Mfg. Co.

WRITE FOR CIRCULARS

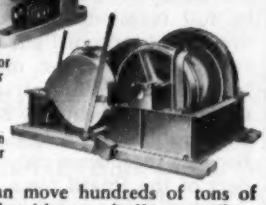
ELKHART 6 INDIANA

"Superior" Electric

Carpullers

CAPSTAN TYPE, DRUM TYPE AND SPECIAL TYPES

Model SC Superior Capstan Carpuller



Model EP Drum Type Carpuller

One man can move hundreds of tons of rolling load with practically no effort. Economical, efficient, Carpullers are available for your specialized requirements.

Write for bulletins and catalogs!

Designed and Manufactured by

SUPERIOR-LIDGERWOOD-MUNDY CORPORATION

Main Office and Works: SUPERIOR, WISCONSIN, U. S. A.
New York Office, 7 Dey Street, New York 7, N. Y.

LABOR . . . Continued from page 132

tion problem in the industry. Only recently the Supreme Court refused to hear unfair labor practice case against a contractor and subcontractor who employed millwrights for the installation of machinery. The charges were filed by the International Association of Machinists, and the contractors were required to make substantial back-wage payments to eight job applicants. In a similar case the Board ordered a contractor to make back-wage payments of almost $6,000 to three machinists.

4. Prohibit either party to a signed contract from making new demands not covered in the negotiations until expiration of the contract, unless the contract provides for a re-opening or the parties mutually agree to re-open during its term.

5. Based upon investigation and study, Congress should enact necessary legislation to "protect and conserve" welfare and pension funds for their beneficiaries. Undoubtedly this recommendation results from preliminary findings of exploratory investigations undertaken by two Congressional committees and the mismanagement of the welfare fund of a building service local union in New York State. You can look for administration of these funds to be regulated in some manner.

6. Upon completion of a study now under way on the over-all question of jurisdictional conflict between federal and state labor laws specific recommendations will be submitted to Congress. In two recent cases the Supreme Court has reduced the states' power to deal with labor disputes within the jurisdiction of the federal law. Letting states have more to say about labor disputes within their boundaries is in line with the thinking of National Labor Relations Board Chairman, Guy Farmer, (CM&E Jan. 1954, p. 124).

7. The President recommended a government-conducted secret vote of striking employees "to express (their) free choice." It was thought that this meant before a strike began. However, the bill submitted by Senator Smith provides that the NLRB conduct the poll after the strike has begun. Even if a majority of the employees voted against the strike it would not be illegal, but the Board would not consider any unfair labor practice

6,000 E-Z SHORE CLAMPS

SPEED CONSTRUCTION ON THIS BUILDING

Brown-Schrepferman & Company speed construction on this multi-story department store building in Denver, Colorado with E-Z Shore Clamps.

SAVES LUMBER

2x4's and 4x4's are used over and over. E-Z Shore clamps eliminate nailing, sawing, splitting or discarding of shoring timbers

CUTS LABOR COSTS

Shoring floors for concrete is completed with less labor, skilled or unskilled. No measuring, sawing, bolting or spiking necessary.

SAVES TIME

Shores are set up or dismantled in half or less time. Use for irregular surfaces (arches, stairways), to build scaffolds, takes tension as well as compression loads.

GET COMPLETE DETAILS

WRITE TODAY ...for prices and details on direct purchase, rental or trial plan on the original side-swing E-Z Shore Clamps.

WESTERN SALES & SUPPLY

4615 Washington Denver, Colorado

Gentlemen: Please send complete information and prices on E-Z Shore clamps.

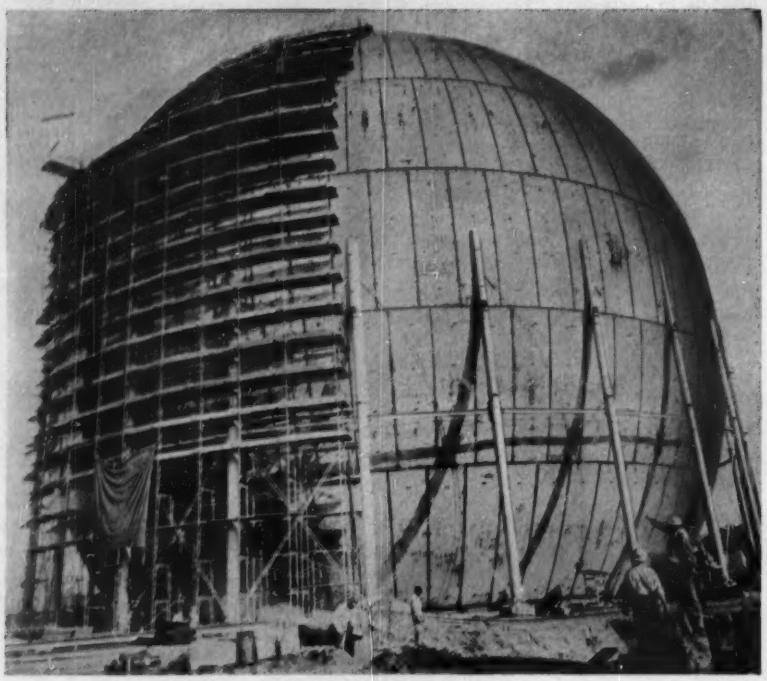
We would use approximately _____ pair.

Firm Name _____

Address _____

City _____ Zone ____ State _____

By _____ Title _____



World's Largest Ball Simulates Sea-Going Conditions

18-Story Steel Ball Built for Atomic Sub Tests

SAFWAY SCAFFOLD FITS UNUSUAL FORM

EVEN A SPHERE does not present any particular problems for Safway Steel Scaffolding!

With the aid of Safway equipment, the world's largest ball has been erected at West Milton (Schenectady), N. Y. This huge spherical structure has walls of one-inch thick steel plate. It will be used to simulate sea-going conditions for testing components of atomic-powered submarines.

Standard Safway parts were assembled into a 3-dimensional scaffold that hugs contours of the monster ball and supports a series of arc-shaped platforms reaching over halfway to the top. Also, one of Safway's new material hoist towers was used for raising work materials to the top platform level.

FITS 'EM ALL—LARGE OR SMALL

No matter what you're building, Safway Scaffold will fit the job. If it's large or small—high or low—regular or irregular—Safway can show you how to scaffold the job for the most efficient work.

With plenty of elbow room at the best working locations, your men can complete elevated jobs faster and better . . . and with maximum safety both above and below.

That's why you get greatest economy when you use Safway Scaffold on jobs of every size and type. It will pay you to look into these advantages today!

For more facts, write for your FREE bulletin . . .

SAFWAY STEEL PRODUCTS
INCORPORATED
6243 West State St.
MILWAUKEE 13, WIS.
Manufacturers of Tubular Steel Scaffolding and Equipment

RENTED and SOLD by distributors everywhere

LABOR . . . Continued

charges filed against the employer. Regardless of the apparent confusion it is doubtful that this proposal will pass.

There are a number of additional recommendations covering union financial reports, the non-communist affidavit, authorization of check-off, recommendations of fact-finders in national emergency strikes.

Informed sources express considerable doubt as to whether any of the changes will be adopted in this session of Congress. You can be sure that there will be a real fight from industry and labor, so let your Congressmen and Senators know what you think. Your opinion is their best guide on how to vote.

Brotherly Love

Implementing the resolution on jurisdictional disputes within the AFL proposed by Dick Gray and adopted at the last AFL convention, two giant AFL unions have come together to try and settle the oldest and costliest jurisdictional dispute that has plagued contractors for more than 40 yr. In a series of meetings representatives of the United Brotherhood of Carpenters and the International Association of Machinists, with two outside consultants, are trying to resolve the thorny question of erection and installation of machinery. While past efforts to reach agreement between the two unions have failed, there is unusual optimism over the current meetings. Both sides are anxious to settle the issue by a permanent agreement.

Who's Who

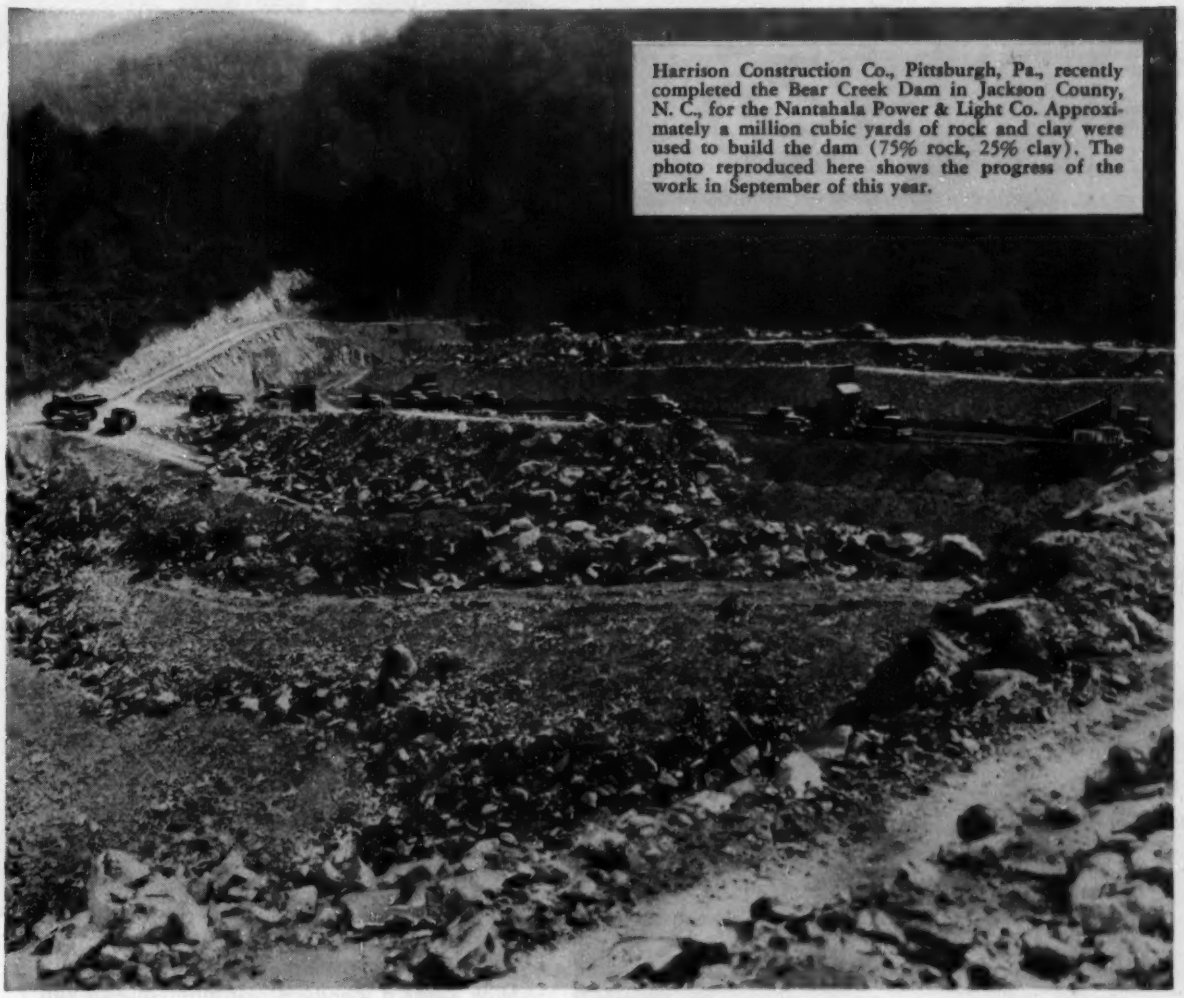
The recent appointment of Albert C. Beeson to the National Labor Relations Board rounds it out to full membership. He fills the unexpired term of Paul Styles who resigned. The new member has been director of industrial relations of the Food Machinery & Chemical Corporation of San Jose, California. Because there were only four members of the Board for a number of months, quite a few major cases involving Board policy were held up by tie votes.

Leon Kromer, CM&E labor editor, recently was appointed director of labor relations of the Albany, (N.Y.) Builders Exchange. The Exchange is an affiliated association of the Building Industry Employers of New York State. He will be coordinating contractor-labor relations with 13 building trades unions.

GULF PRODUCTS *and* FINE SERVICE

keep equipment rolling

on North Carolina Dam Project



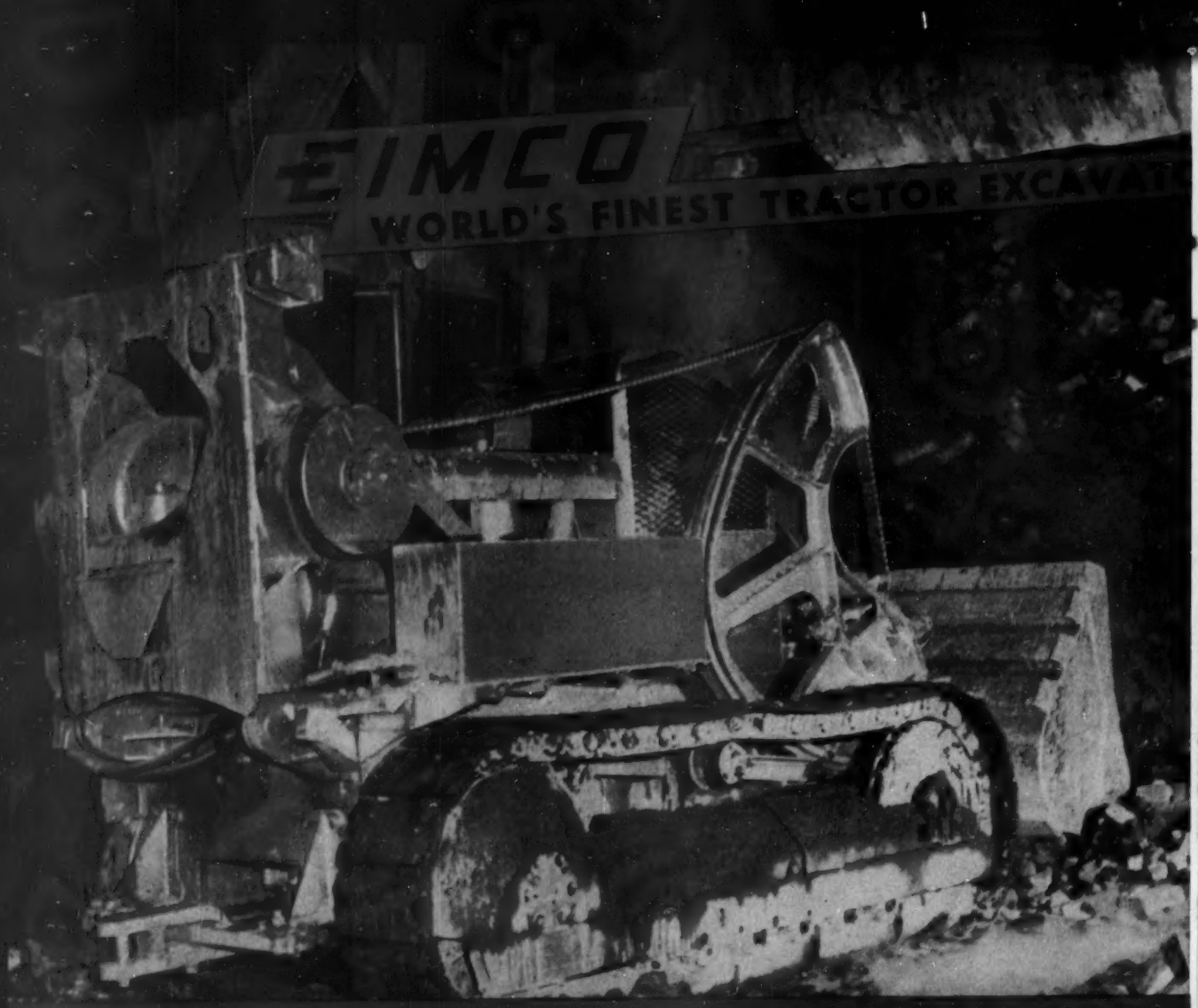
Harrison Construction Co., Pittsburgh, Pa., recently completed the Bear Creek Dam in Jackson County, N. C., for the Nantahala Power & Light Co. Approximately a million cubic yards of rock and clay were used to build the dam (75% rock, 25% clay). The photo reproduced here shows the progress of the work in September of this year.

WITH higher-than-ever operating costs threatening every dollar of profit, it will pay you to take stock of the advantages of Gulf Service and Gulf Petroleum Products.

Advantages like these, for example: Quality lubricants that provide an extra margin of protection for every gear and bearing; fuels that insure full power for every engine; expert petroleum engineering counsel; and prompt delivery service. You'll find, as have so many leading contractors, that they all add up to fewer mechanical delays, lower maintenance costs, and an all-round smoother operation.

Let us discuss with you how our products and services can help you on your next job. They are available to you through more than 1400 warehouses in 31 states from Maine to New Mexico.

GULF



Hot slag, brick and debris tumbled down in this steel mill open hearth slag pocket to clear the way for furnace refining above. The mass of molten white hot metals and slag along with brick and refractories must be cleaned up quickly — the furnace is out of production until this job is complete.

This is considered one of the toughest kind of loading jobs — a combination digging, excavating, prying and loading under intense heat conditions. Previously several types of equipment were used — each for a special function. Now the 105, shown above, is able to replace two or more of these pieces of equipment, speed up the job and get the pocket cleaned in record time.

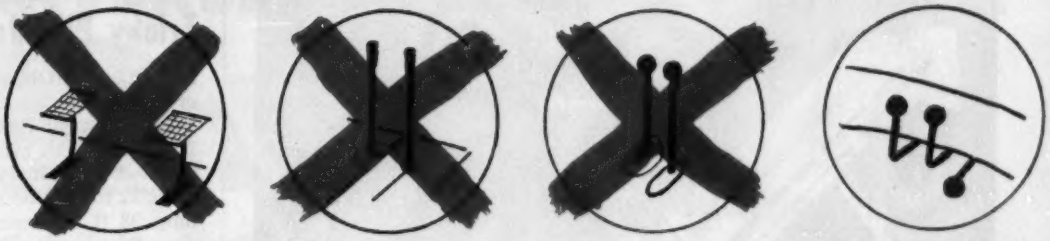
The Eimco 105 picks up the white hot material, ranging in size to 5 or 7 tons, and dumps it overhead into a railroad gondola. (See below.)

Nine yards a minute is fast loading, and you can do it with the Eimco 105. You can dig and load most ordinary materials without preliminary breakage.

The Eimco 105 is primarily an excavating machine with ability to load consolidated material. It will handle many jobs previously assigned to heavy cumbersome machinery costing several times the price of the 105.

Steel castings and steel construction throughout make the 105 rugged and dependable. It is truly the first crawler unit designed to work under the added thrust and weight loads applied by the numerous attachments now available for contractors and industry that are accepted as part of the prime movers they buy. Its all steel construction makes it resist breakage from impact or abrasion which all machines encounter in normal working.

R WITH COST SAVING ADVANTAGES



The 105 is a modern tractor, designed to meet the needs of modern, up-to-date machinery users. The need of clutch pedals has been eliminated, the use of steering brakes has been removed and the need for shifting transmissions by hand is no more. The Eimco 105 works smoothly and efficiently with two small levers which control the tracks on their respective sides. The 105 may be shifted from forward to reverse independently on either track with no clutching — no shifting. Turns can be accomplished by twisting one lever to forward position and the other to reverse to provide spin turns, or longer turns can be effected by proper manipulation of these same handles. Gear changing is done with a separate small handle which may be actuated at any time during the operation of the machine.

The cycle of the loading unit is fast (see below) — digging or excavating is forward, discharge is overhead to the rear. Complete cycles from digging position to digging position average 10 to 15 seconds, which will permit loading of 6 to 9 yards per minute depending on material being loaded and travel distance.

EIMCO

B-9

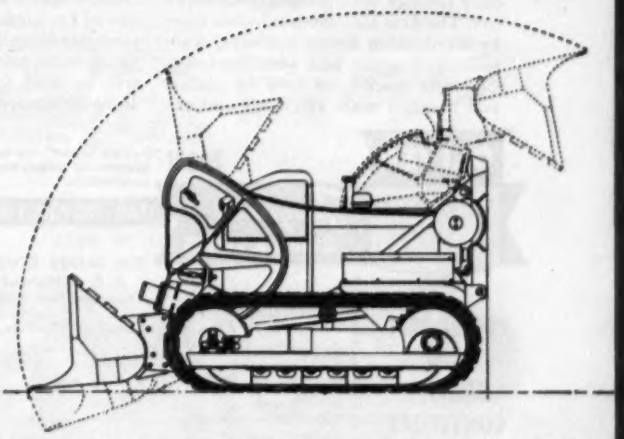
THE EIMCO CORPORATION

Salt Lake City, Utah, U.S.A.

Export Office: Eimco Bldg., 52 South St., New York City

With the 105 you have the first and only truly modern crawler type unit for heavy work. It's fast. It needs only a minimum of attention. It requires the least in physical operating effort of any machine of its type. It will do many things that no other machine will do; and if mechanical attention is ever necessary, its various units are designed for easy accessibility so that the work to be done can be finished in only a fraction of the time required for a similar repair on any other prime mover.

Let us tell you about this machine: where the driver sits up front and can see what he's doing, where the loading equipment is fastened directly to the heavy main frame permitting free track oscillation at all times, that allows for speed changing under full power and load without sacrificing any advantage, that gives you a drawbar pull in the big class with a price in the small class, and many more exclusive advantages. Just write: The Eimco Corporation, P. O. Box 300, Salt Lake City 10, Utah.



Rocker-arm loading action provides fast, efficient loading. Bucket shown in the digging, carry and discharge positions pictured above.

Here's PROOF that FARQUHAR Conveyors pay for themselves!

This installation saves labor, money and time for M&L Construction Company, Philadelphia, Pa.

It didn't take long for this Farquhar Conveyor to pitch in and pay for itself at the M&L Construction Co. According to Superintendent T. J. Mingey, the savings in labor costs alone amounted to $125 a week. In less than 3 months the Conveyor's low initial cost was liquidated!

Manpower and money aren't the only savings with Farquhar Conveyors. The firm also saves valuable time by eliminating costly runways, scaffolding, buggies and wheelbarrows. Concrete trucks can now be placed and handled more efficiently and unloading time has been cut to a minimum! Mr. Mingey says, "We find we are able to unload a truck of concrete (6½ cubic yards) in less than ten minutes."

And what's more—they can move coal, gravel, sand, aggregates or any kind of bulk materials—Farquhar can help you cut costs and time to a minimum. One or more of the complete line of Farquhar Conveyors will solve your handling problems. Write outlining your problem—our engineers will be glad to consult with you—at no obligation.

OLIVER Farquhar CONVEYORS

POWER-BELT AND GRAVITY CONVEYORS

FREE! "Owners Report"—a booklet of case histories of money-saving conveyor installations.

MAIL COUPON FOR YOUR COPY

THE OLIVER CORPORATION
A. B. FARQUHAR DIVISION
Conveyor Dept. F-26, York, Pa.

Gentlemen:
Please send me my free copy of "Owners Report."

Name .....
Firm .....
Address .....
City ..... Zone ..... State .....

Low Ceiling Makes Tricky Pile Job

INSTALLATION of 44 steel pipe piles on a modernization job inside National Sugar Refining Co.'s Long Island City (N. Y.) plant was complicated by limited headroom: Piles were 32 to 36 ft long, and there was only 23 ft between floor and ceiling. Space necessary for hammer and rigging cut even this small clearance down to 12 ft. However, by spudding pilot holes and casing them with cardboard tubes, the piles were driven in only two sections each, rather than three.

The closed-end 10¾ x 5/16-in. piles had to be put down, usually in clusters of three, through miscellaneous filled ground containing such things as riprap, concrete blocks and old timbers. To drive them through this junk, Cummins, Coakley & Booth Inc. slung a McKiernan-Terry No. 7 hammer from the boom of an Elwell-Parker electric industrial-type crane. Because the job was confined to a relatively small area, and because the wheeled crane could move easily and rapidly on the plant's concrete floor, each step of the driving operation was completed on all 44 piles before the next was begun. That way it was not necessary to re-rig the crane between piles.

First step was to break out the floor at each cluster location and dig a triangular pit for the pile cap. Six feet on a side and 2 to 3 ft deep, these pits also served to hold 3x10-in. timber braces to guide the piles, eliminating any expensive frame above floor level.

A 13-ft length of 12¾ x ⅜-in. pipe with a welded point then spudded 8-ft deep holes in the pits for the piles. The spud was cabled to the hammer, so could be extracted directly by the crane with no loss of time. Immediately after spud extraction, an 8-ft section of 12½-in. dia cardboard Sonotube was put in the hole to stop run-in.

When all holes had been spudded and cased, 16- to 18-ft lengths of pipe pile were placed inside the Sonotubes and driven to floor level. An 8-ft follower hooked to the hammer next drove them down to the bottom of the tubes. The second and final section of pile, fitted with a driving-fit sleeve joint, then was placed on the driven section and hammered to grade. Concreting piles and caps completed the tricky little job of Cummins, Coakley & Booth Inc., New York City.

The UNIVERSAL 293Q TwinDual PACEMAKER

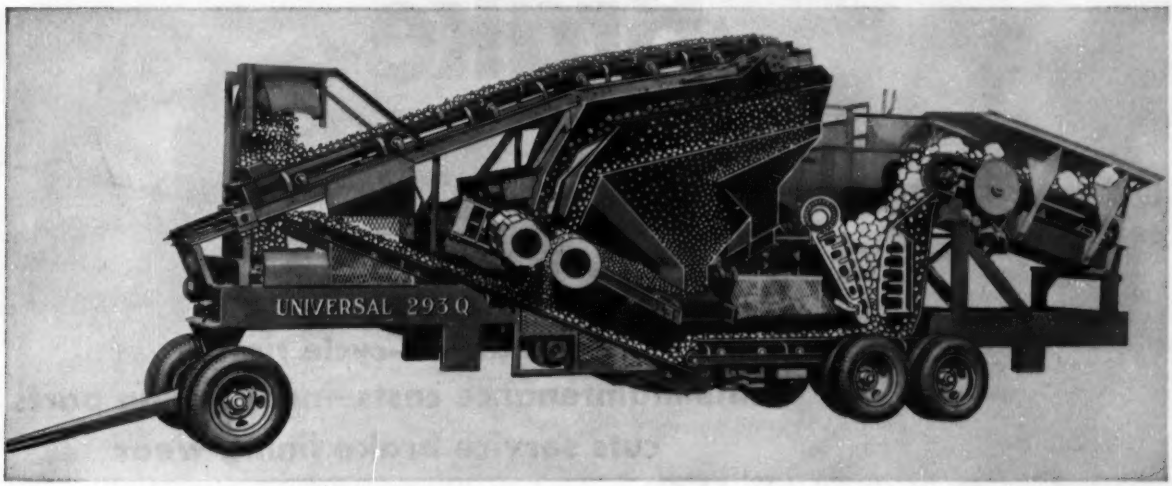
gives you these

EXCLUSIVE

Profit-Making Advantages

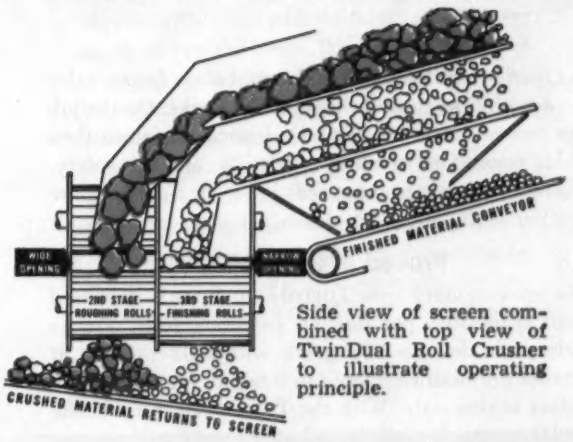
- TwinDual Roll Crusher
- Three separate crushing operations
- Primary and Secondary on single truck
- Only one plant to move instead of two
- Only one power unit to service
- Flexibility for rock or gravel
- 20% greater screening efficiency
- Better quality finished aggregate
- Lower initial cost — lower maintenance cost
- Top production

Jaw crusher and Apron feeder are mounted on separate skid frame to meet highway weight limits.



PIT OR QUARRY — rock or gravel. Name your operation. The TwinDual Pacemaker sets new standards for profitable hour after hour tonnage at low cost per ton. Three crushing operations with Universal's exclusive TwinDual Method provide top capacity, divide the load between three crushing stages. Permit a more favorable ratio of reduction resulting in longer crusher life, less maintenance and better quality finished product.

There is much more to the profitable TwinDual Story. Facts are yours for the asking. Bulletins U520 and U501 will give you detailed information.



Side view of screen combined with top view of TwinDual Roll Crusher to illustrate operating principle.

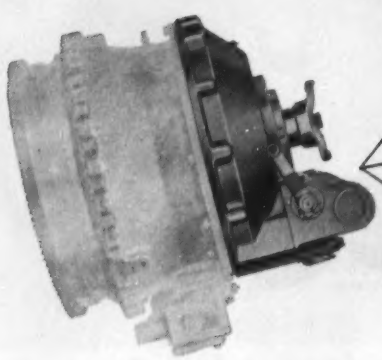
UNIVERSAL ENGINEERING CORPORATION subsidiary of **PETTIBONE MULLIKEN CORP.**

327 8th Street, Cedar Rapids, Iowa
Phone 7105

4700 W. Division St., Chicago 51, Illinois
Phone SPaulding 2-9300

Faster, safer downhill hauling with

New Allison Torqmatic Brake



Speeds job-cycle time—
cuts maintenance costs—no wearing parts
cuts service brake lining wear

ALLISON'S *new* TORQMATIC BRAKE brings faster, safer downhill hauling to heavy-duty trucks. On-the-job tests prove that in many cases drivers can more than *double* present downhill speeds with complete safety. This new dynamic brake speeds job-cycle time for more trips per shift—more pay loads per day.

Proved in Field Tests

This revolutionary new TORQMATIC BRAKE increased round trips 50% per day on year-long tests. Trucks safely came down a 10% grade with a 34-ton load at 12 miles per hour compared to 6 m.p.h. for trucks with friction brakes only. With the TORQMATIC BRAKE, the regular service brake linings lasted from 6 to 8 months —without it they required monthly replacement.

Increased Safety—Better Control

There are no active braking parts to burn up or wear out in the TORQMATIC BRAKE. Drivers have complete control at all times—can brake continuously even going down the steepest grades with the heaviest loads. Trucks never "run away" from the driver. The truck's own rolling force produces the braking power needed, to the limit of the driveline components' strength.

Works on Oil

Oil does all the braking work—absorbs all the braking force. The new TORQMATIC BRAKE takes over from friction brakes on downhill hauls, saves regular service brakes for complete stops or "snubbing" on curves. It's

GM GENERAL MOTORS

Allison

ALLISON'S NEW TORQMATIC BRAKE, attached directly to the TORQMATIC Converter, has three major parts — a turning rotor (or "paddle wheel") attached to the torque converter; non-moving or fixed stator vanes cast into the brake housing; and a control valve.

Here's How it Works: To brake a truck going downhill, the driver pulls the handy control lever to let oil into the brake. The truck's wheels turn the rotor or "paddle wheel" through the truck's transmission. The rotor throws the oil against the stator vanes which resist the oil flow. This makes it harder for the rotor to turn and correspondingly makes it harder for the truck's wheels to turn. The driver gets more braking by letting more oil into the brake. He reduces braking by reducing the amount of oil in the brake. The new brake provides up to 400 h.p. of continuous braking effort.

the *first* downhill braking unit designed and installed as an integral part of the truck's driveline. It bolts directly on the TORQMATIC Converter housing—adds only 4 inches to the converter's length. The brake and converter use the same oil. There are no freezing problems in winter. The TORQMATIC BRAKE can be specified in new trucks equipped with Allison TORQMATIC DRIVES.

If you're hauling on hilly, mountainous downhill runs, you can cut costs and increase production with Allison's new TORQMATIC BRAKE. For full details, contact your truck manufacturer or write for Bulletin SA 1026 to:

ALLISON DIVISION OF GENERAL MOTORS
Box 894T, Indianapolis 6, Indiana

TORQMATIC BRAKE

NEWEST MEMBER OF THE TORQMATIC DRIVELINE

UNIT CRANE & SHOVEL CORP.

UNIT

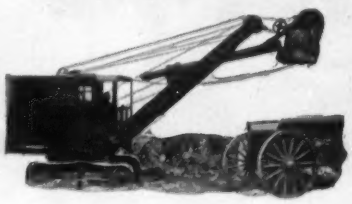
MILWAUKEE WISCONSIN

. . the Trademark that *Signifies*

PROGRESS

You can always rely on equipment carrying the distinctive UNIT emblem. Backed by more than a quarter century of engineering and manufacturing experience, this well-known trademark signifies progress in crane and shovel design. It is your guarantee of obtaining the finest and most dependable equipment that money can buy.

1930 — Every UNIT was equipped with ONE PIECE GEAR CASE, enclosing all gears, shafting and bearings in a constant bath of oil. Also featured was the CLUTCH SHAFT ASSEMBLY, using Disc Type Interchangeable Clutches and "Straight-in-line" engine mounting. Reduces maintenance. Improves performance.



1939 — Introduced AUTOMATIC TRACTION BRAKES. These internal expanding friction type brakes, engage and release automatically and provide traction lock without manual control. Steering is accomplished by single lever control.

1944 — Yes 10 years ago, UNIT made the "break" from the old style conventional type of cab to the UNIT FULL VISION CAB. The compact design of the upper structure enabled UNIT to make this decided improvement, giving the operator 360° of complete visibility. This exclusive feature was designed *into* the machine . . . not just tacked on.

1954 — Bring NEW DEVELOPMENTS such as: UNIT with TORQUE DRIVE — SOLENOID ACTUATED DIPPER TRIP — ALUMETALLIC CLUTCHES — Latest Crane Carrier Design and other UNIT features described in Bulletin U-1153. Write for your copy.

• • •

UNIT models available in ½ or ¾ yard Excavators . . . Cranes up to 20 tons capacity . . . Crawler or Mobile types . . . Gasoline or Diesel. Ask for literature.

UNIT CRANE & SHOVEL CORP.

6305 W. BURNHAM STREET • MILWAUKEE 14, WIS., U. S. A.

All Models Convertible to ALL Attachments!

SALES AND • SERVICE •

News of manufacturers' activities designed to assist the reader in the purchase of machinery, equipment and materials and help him obtain quick service on parts and maintenance.

Distributor Appointments

The Prime-Mover Co.: Announces the following new distributors—R. S. Armstrong & Bros. Co., 676 Marietta St., N. W., Atlanta 3, Ga.; The Brady Co., 28 S. 20th St., Birmingham, Ala.; F. M. Equipment Co., Inc., 515 S. Industrial, Dallas, Tex.

Nordberg Mfg. Co.: Appointment of J. Frank Knorr Incorporated, Miami, Fla., and their affiliate J. Frank Knorr of Tampa, Inc., as distributor for Nordberg type 4FS engines in southern and central Florida has been announced.

St. Paul Hydraulic Hoist: Announces the appointment of Chicago Hoist and Body Co., 8820 Vincennes Ave., Chicago, with exclusive sales rights of St. Paul products for the following territory—In Illinois the counties of DuPage, Will, Kankakee, Iroquois, Ford and the southern portion of Cook. In Indiana the counties of Lake, Porter, Newton and Jasper.

Euclid Div., General Motors Corp.: Announces the appointment of Sierra Machinery Co., Inc., 307 Morrill Ave., Reno, as a new distributor of Euclid earthmoving equipment in Nevada.

Western Machinery Co.: New and expanded facilities have been occupied by the Industrial Sales Division in Denver, Colo. Located at 2400 S. Seventh Ave., the Denver office of the company is sales agent for many lines of mining, industrial and construction machinery in the Rocky Mountain Area and also acts as distributor for the company's line of WEMCO ore treatment and materials handling products, and the services of the company's Western-Knapp Engineering Division.

Harnischfeger Corp.: Announces the appointment of Western Contractors Supply Co. as P&H Excavator distributor for Illinois and Indiana counties. The company is presently located at 3145 W. Lake St., Chicago, but will shortly move to its new four-acre sales and service headquarters in Melrose Park, Ill.

The Prime-Mover Co.: Has appointed the following distributors for its powered wheelbarrow — Southern States Equipment Co., New Orleans,

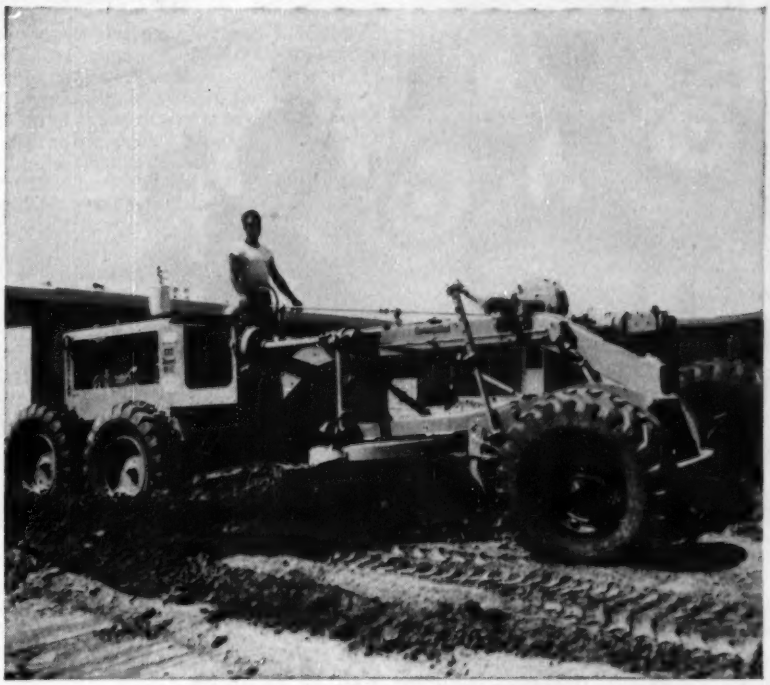
(Continued on page 147)

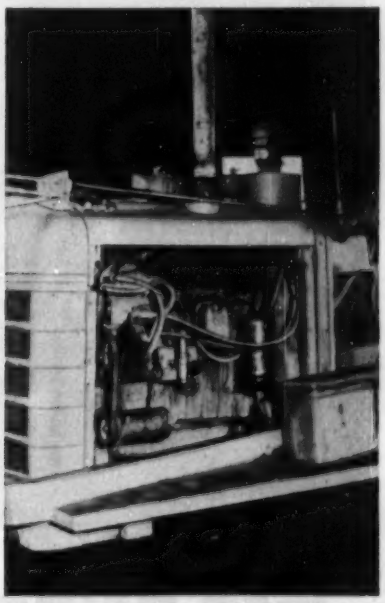
The Engineer's Report

CASE HISTORY

LUBRICANT RPM Delo Oils

FIRM Dana Company, Inc., Apple Valley, Calif.





This paving machine diesel worked more than 2400 hours, laid 85 miles of asphalt highway before even the head was removed.

No bearing, ring trouble in 6 years desert operation!

Sand, wind, dust and heat are tough on engines in the California desert where Dana Company, Inc., develops subdivisions, builds and paves streets and highways. But, using RPM DELO Lubricating Oils, not one engine lost a bearing or stuck a ring in 6 years. Even with constant dust conditions and rapid temperature changes—often from below freezing to 75°F. in a morning—they have no carbon and sludge problem. "RPM DELO Oils keep our engines very clean and cut repair costs," says Mr. Ross Dana, President. "One diesel in a paving machine laid 85 miles of asphalt, worked 2400 hours before it was touched. Then, only a valve grind was needed."

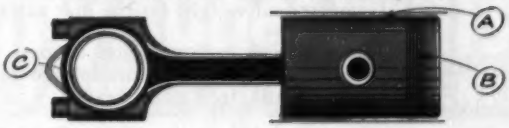
FREE FOLDER tells you about all the RPM DELO Oils and how they meet every heavy-duty engine condition. Write or ask for it today.

FOR MORE INFORMATION about petroleum products of any kind or the name of your distributor, write or call any of the companies listed below.

RPM DELO LUBRICATING OILS

TRADEMARK "RPM DELO" REG. U.S. PAT. OFF.

How RPM DELO Oils reduce wear, corrosion, oxidation in all Heavy-Duty Engines



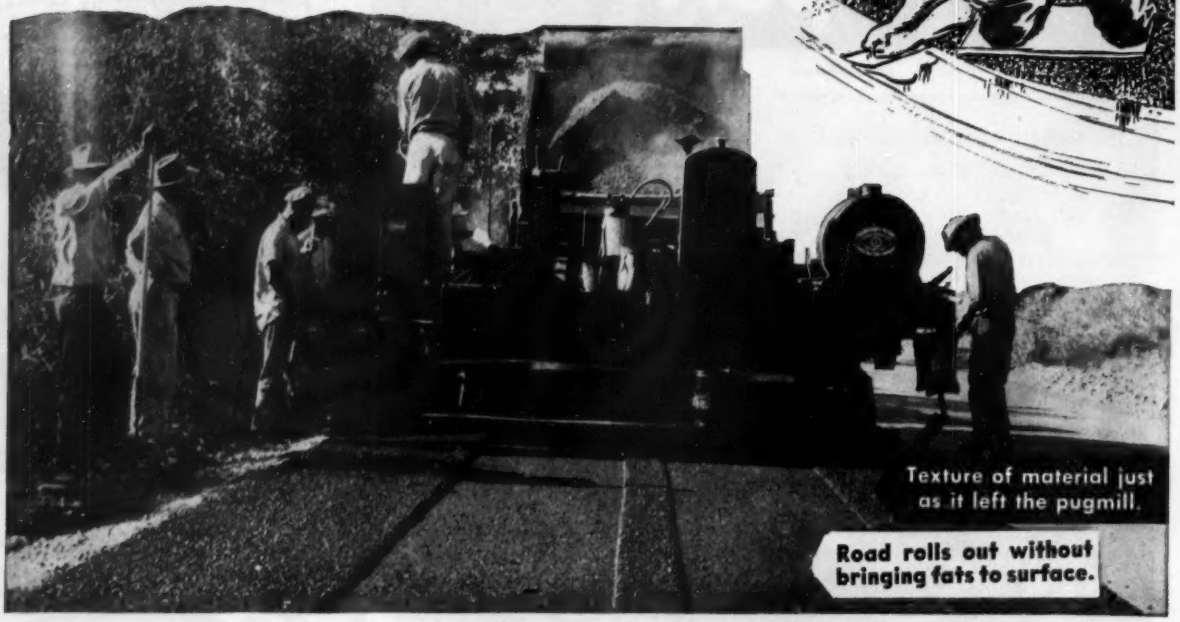
A. Contain special additives that provide metal-adhesion qualities...protect parts whether hot or cold, running or idle.

B. Anti-oxidant resists deterioration of oil and formation of lacquer...prevents ring-sticking. Detergent keeps parts clean...helps prevent piston scuffing.

C. Special compounds stop corrosion of any bearing metal and foaming in crankcase.

STANDARD OIL COMPANY OF CALIFORNIA, San Francisco 20 • STANDARD OIL COMPANY OF TEXAS, El Paso
THE CALIFORNIA OIL COMPANY, Barber, New Jersey • THE CALIFORNIA COMPANY, Denver 1, Colorado

NO TROWELING



—to bring fats to the surface!

EVERYONE has watched a mason trowel concrete and noted how the action brings the water and fats to the surface. This is typical of the movement of a flat blade in surfacing a mix bonded by a liquid.

The Adnun Black Top Paver Oscillating Screed *leaves the texture of the mix just as it was when it left the pugmill.* It does not trowel fats to the surface! Oscillating action kneads the material into place. The travel of the screed gives the mix time to "bed down" naturally, assuring a better keying of the aggregates in the mix. The Adnun Screed *cuts* the material off at the right height. There is no scraping, dragging action to distort the subsurface structure of the mat. There is no increase in fines and there is no screed weight on the mat surface.

Overlapping action makes a tight joint by carrying the material up to and compacting it against the parallel course eliminating the constant hand work of carrying shovel loads back to fill cracks.

To these advantages add the Fluid Level that will assure both absolute uniformity in thickness and vastly improved uniformity in density along with a definite reduction in waste of materials now going into the hollows.

If you haven't seen the little booklet, "Put A Level On Your Roads," ask for it. It has some new thinking on road building.

BLAW-KNOX COMPANY
FOOTE CONSTRUCTION EQUIPMENT DIVISION
1910 State Street,
NUNDA, NEW YORK

BLAW-KNOX

ADNUN TRADE MARK REGISTERED **BLACK TOP PAVER**

SALES AND SERVICE . . .

Continued from page 144

La.; M. D. Moody & Sons, Inc., Jacksonville, Fla.; Highway Equipment & Supply Co., Orlando, Fla.; and Blanchard Machinery, Inc., Miami, Fla.

On the Sales Front

Rockwell Mfg. Co.: Richard E. Miller of 1311 Seventh Ave., Columbus, Ohio, general manager of the company's Columbus plant, has been appointed to the newly created position of product sales manager in charge of all saws and expendable tools sold by Rockwell's Delta Power Tool Division with headquarters at Pittsburgh.

Perfection Steel Body Co.: Has announced the appointment of John J. Hannan as southwestern United States sales representative with headquarters in San Antonio, Tex.

Pioneer Engineering Works, Inc.: A. J. Belanger has been appointed sales manager; and Elton T. Fair was named district sales representative in Colorado, Wyoming, the greater part of Montana, the western half of South Dakota and five western counties in North Dakota.

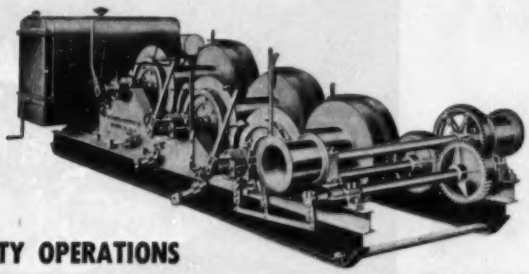
Universal Atlas Cement Co.: Announced the appointment of Brendan J. Whittaker as sales manager of the Boston territory of the company. James T. Maher was appointed assistant to vice-president, sales, eastern and southern region.

A. O. Smith Corp.: Appointments naming regional managers of the key East and West Coast district offices have been announced. Walter W. Stake, formerly assistant general sales manager for the Permaglas-Heating Division stationed in New York, has been named regional manager for the eastern district. Allen O. Dragge, who has had jurisdiction over the West Coast operations, now has been named regional manager of the Pacific Coast District with offices at Los Angeles.

The Texas Co.: T. R. Ellis has been appointed manager of the Asphalt Sales Department succeeding D. R. Donlen, who is retiring after 30 yr with the company.

Galion Iron Works & Mfg. Co.: Recently appointed James M. Borror western sales manager and J. H. Tiller southern sales manager, with headquarters in Galion, Ohio. Also announced were the following changes in district representatives effective January 1st: Rex F. Price, who for the last 6 yr has been Galion's district representative on motor graders and rollers in the southwest, will be transferred to the

OK HOISTS



FOR HEAVY-DUTY OPERATIONS

Here's a rugged and dependable hoist that will tackle your heaviest construction job, give you trouble-free operation throughout its long life . . . the OK Hoist.

OK manufactures hoists for any and all types of building construction, in single, double or triple drum styles, powered either by gasoline or electricity from 10 to 175 horse power.

OK also manufactures

- PORTABLE ELEVATORS
- AIR COMPRESSORS
  105, 160 or 210 cu. ft. of air per minute
- HEAVY-DUTY WINCHES

Write today for further information and specifications on these OK products.

O. K. MACHINERY DIVISION
OK
MORE THAN 35 YEARS OF DEPENDABLE SERVICE
COLUMBIA, PA. U.S.A.
JOHN C. MOTTER PRINTING PRESS CO.

1974 Florence St., Columbia, Pa.

McCarthy Auger Drills

TOUGHEST . FASTEST . MOST EFFICIENT

BLAST HOLE DRILLS

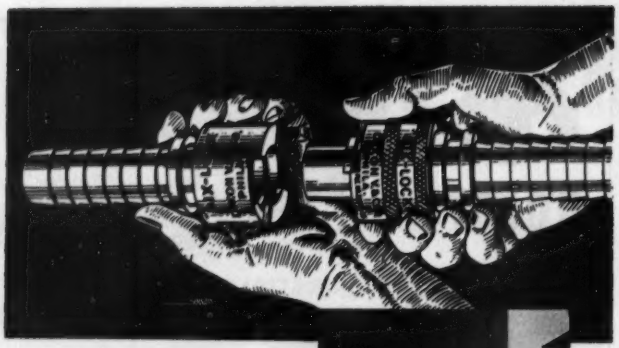
Fast, mobile McCarthy Vertical Blast Hole Drills cut blasting costs of the Apex Powder Company by more than 20% as compared to air, well or churn drilling on the two-million dollar, five-mile superhighway (Route 62) from Hubbard, Ohio, to Sharon, Pa. Cutting through two large areas of concentrated rock, 150 holes, 15 ft. deep, were drilled for each blasting pattern. About 3,000 cubic yards of sand rock were moved at each blast. Due to the ruggedness and mobility of McCarthy drills, the job was completed ahead of schedule. McCarthy drills can work for you too! Write to The Salem Tool Company direct for further information and our distributor will contact you promptly.

Also manufacturers of Underground Horizontal Auger Drills

Heavy-Rugged Powerful

SALEM

MANUFACTURED BY
THE SALEM TOOL COMPANY
765 SOUTH ELLSWORTH AVE. . SALEM, OHIO, U. S. A.



THIS *Quick-Acting* HOSE COUPLING

combines outstanding strength and durability with light weight and compact, streamlined design. Long a favorite with users of air and pneumatic tool hose, it is equally efficient in other applications, including hydraulic service at pressures up to 2,000 lbs. p.s.i., and the handling of non-poisonous, non-inflammable gases at pressures to 1,500 lbs. p.s.i.

The DIX-LOCK *Coupling*

incorporates a simple, efficient and long-proven method of quick action which assures trouble-free service and extra speed in connecting and disconnecting. Regardless of the hose or I.P.T. size, any "Dix-Lock" with male locking head may be connected to any "Dix-Lock" with female locking head by pushing the ends together and giving a quarter-turn. Disconnecting is accomplished by simply drawing back the locking sleeve and reversing the quarter-turn.

"Dix-Lock" Couplings are made in brass and cadmium plated steel, in ⅜", ½" and ¾" sizes. "Air King" clamps are recommended.

Stocked by Manufacturers and Distributors of Industrial Rubber Products

DIXON *Valve & Coupling Co.*

GENERAL OFFICES & FACTORY PHILADELPHIA 22, PA. BRANCHES CHICAGO BIRMINGHAM • LOS ANGELES • HOUSTON • DIXON VALVE & COUPLING CO., LTD. TORONTO

ASSOCIATE COMPANIES: BUCK IRON COMPANY, INC. QUARRYVILLE, PA. • PRECISION DRAWN STEEL COMPANY, CAMDEN, N.J.

SALES AND SERVICE . . .

Continued

midwest, covering Oklahoma, Nebraska, Kansas, Missouri and several counties in southern Illinois. He expects to make his headquarters in Kansas City, Mo. William A. Beale will take over the southwest territory being relinquished by Mr. Price, representing Galion in California, Arizona, New Mexico, Colorado and Nevada. In his new position, Beale will make his headquarters in the Los Angeles area.

Flexible Steel Lacing Co.: Vertner S. Kenerson is now representing the company in the Carolinas, Virginia and east Tennessee, taking over part of the area formerly covered by Austin Webster who has retired.

St. Paul Hydraulic Hoists: The appointment of John E. (Joe) Brown as district manager, north Central territory, was recently announced.

Tractor Div., Allis-Chalmers Mfg. Co.: William J. Klein, manager of the Minneapolis branch, has been named vice-president and general sales manager of the division.

Truscon Steel Div., Republic Steel Corp.: Announces the appointment of A. B. Greene as manager of sales, Reinforcing Products, with headquarters in Youngstown.

Leschen Wire Rope Div., H. K. Porter Co., Inc.: A new sales district covering Texas, Louisiana and Oklahoma has been established. Headquarters are in Houston, Tex., and will be managed by F. E. Suder.

Waco Manufacturing Co.: Edwin Daw has been appointed to the sales staff with headquarters in Minneapolis. He will act as field representative for the firm and assist distributors in sales, customer relations and engineering problems in regard to shoring applications.

Zonolite Co.: Harry M. Dixon has been appointed sales engineer in the Z-Crete Division.

Clayton Mfg. Co.: Expanding distribution and the development of new markets for the Clayton package-type steam generator have resulted in the adoption of a two-platoon system of sales managership with the national market divided into an eastern and western divison, each under its own sales manager. J. J. Billman became western sales manager and H. M. Kirkby took over sales direction for the eastern division, operating out of the company's Chicago office.

The Pierce Governor Co., Inc.: The appointment of Roy W. Green, to the sales staff was recently an-

(Continued on page 150)

Stockpiles coal, sand, aggregate. Has traction and flotation to work right up on the pile.

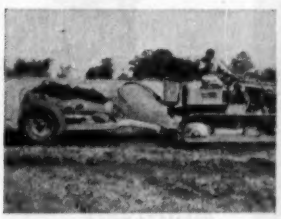
Excavates, fills, levels. Compact — for work in limited areas.

Backfills ditches, packs and levels ground with 16,200 lb. weight.

Cleans up rubble with one-cu. yd. tractor-width bucket.

Lifts material where needed. Saves manpower and need for other equipment.

Does sanitary fill work — digs, fills, covers, levels.



Does drawbar work scraping . . . hauling.

Landscapes, grades or slopes lawn areas around building projects.

ALLIS-CHALMERS HD-5G

Always Busy...

because it does so many jobs so well!

Busy equipment is profitable equipment. And thousands of owners are learning every day the year around that there's no more profitable machine on their jobs than the one-yard Allis-Chalmers HD-5G Tractor Shovel.

Loads sand, dirt, snow — any material to dumping height of 9 ft., ¼ in.

TEN QUICK-CHANGE ATTACHMENTS ADD TO HD-5G VERSATILITY

Bulldozer	Trench Hoe
Narrow Bucket	Lift Fork
Rock Bucket	Tine Fork
Crane Hook	Rock Fork
Light Material Bucket	Ripper

Larger size Allis-Chalmers tractors with shovels and other quick-change attachments offer the same wide utility, the same outstanding performing ability as the popular HD-5G. Choose the one that fits your needs.

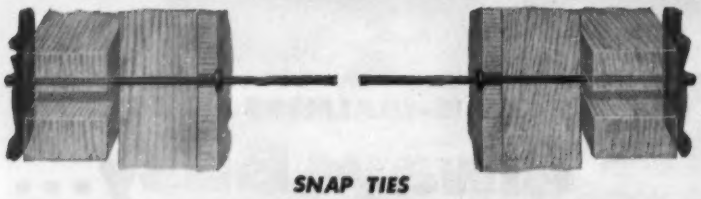
1-YD. HD-5G	2-YD. HD-9G	3-YD. HD-15G	4-YD. HD-20G
40.26 drawbar hp.	72 drawbar hp.	109 drawbar hp.	175 net engine hp.
Dumping height*	Dumping height*	Dumping height*	Torque Converter Drive
9 ft., ¼ in.	11 ft., 4 in.	12 ft., 8 in.	Dumping height*
			13 ft., 5 in.

*Height of bucket hinge

ALLIS-CHALMERS

TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

DEPENDABLE CONCRETE FORMING WITH . . .

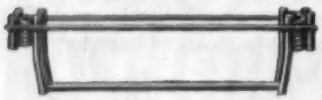


SNAP TIES

STANDARD COIL TIES

CONE-FAST COIL TIES

STANDARD HANGER FRAMES



SPECIAL HANGER FRAMES

. . SUPERIOR CONCRETE ACCESSORIES

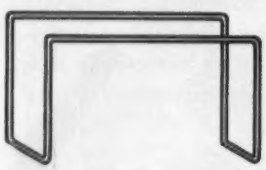
Here you see several of the many various types of Form Ties, Anchors and other concrete accessories which SUPERIOR'S many years of know-how and dependability have produced to meet rigid job specifications.

Every item in the SUPERIOR line is specifically designed to provide the most efficient forming method for ordinary foundations, engineering structures, watertight walls and architectural concrete.

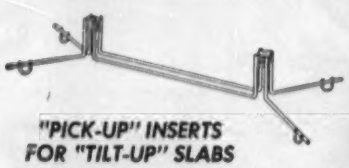
When you plan form work, Superior's experienced engineers are always available to prepare suggested layouts of form work as well as complete estimates and quotations. For complete details request a copy of our 56-page catalog.

ROD CLAMPS

PANEL LOCK BOLTS

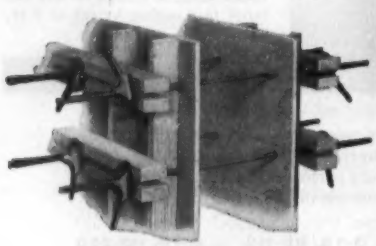


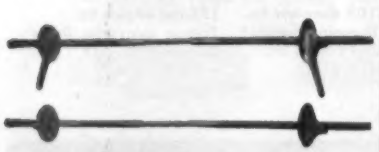
WIRE BEAM SADDLES



"PICK-UP" INSERTS FOR "TILT-UP" SLABS

ADJUSTABLE SCREED CHAIRS





TILT LOCK CLAMPS

CONE NUTS

HEX. NUTS

Steel

Malleable

DOVETAIL ANCHORS AND SLOT

SUPERIOR CONCRETE ACCESSORIES, INC.

4110 Wrightwood Avenue, Chicago 39, Illinois

New York Office — 1775 Broadway, New York 19, N.Y. *Pacific Coast Plant* — 2100 Williams St., San Leandro, Calif.

On projects like these **DELTA** Radial Saws save Hunkin-Conkey thousands of dollars

Delta saws do the work of ten men in cutting—yet actual machine cost is less than 30 cents an hour.

A battery of Delta Radial Saws for on-the-job use at construction projects is chalking up annual savings running well into five figures, says Hunkin-Conkey Construction Company of Cleveland, Ohio.

Several of these saws have been in regular use, averaging more than 6 hours per day, for better than 10 years. There's been practically no maintenance—and at actual machine cost, except labor, of less than 30 cents an hour. They do more accurate work than other saws, do it much faster. Workers like the Delta saws for their ease of operation and their excellent safety features.

Savings like these are possible with the new Delta radial saw because of its many exclusive "extras"—rugged construction, 360° turret action, easy-to-reach up front controls—and many others.

For full information consult your Delta dealer (he's listed in the classified telephone directory under Tools) or write Delta Power Tool Division, Rockwell Manufacturing Company, 658B N. Lexington Ave., Pittsburgh 8, Pa.

MACHINE COST LESS THAN 30¢ AN HOUR

Based on 6 hours operation per day or 1500 hours a year, hourly saw cost figures just under 30 cents, as follows:

	Per Year	Per Hour
Depreciation 10% and average interest 2% on Delta 16" Radial Saw	$75	$ .05
Maintenance and Repairs (average of 7 saws)	30	.02
Saw blade depreciation	36	.024
Saw sharpening, 3 16" blades per week	150	.10
Power cost, 7½ H.P. motor		.10
Total machine cost per hour		.294

DELTA MILWAUKEE **DELTA QUALITY MAKES THE DIFFERENCE**

DELTA QUALITY POWER TOOLS
Another Product by **Rockwell**

New reasons why.. Sherman Power Diggers give you More for '54

NEW "STRESS-DESIGNED DIPSTICK, BOX-TYPE CONSTRUCTION
NEW REINFORCED BOOM, EXTRA BEARING SURFACE FOR LONGER PIN AND BEARING LIFE
NEW DOUBLE-BRAID HOSES FOR MAXIMUM DEPENDABILITY
NEW SWING CONTROL SYSTEM GIVES BETTER CONTROL, SMOOTHER ACTION
NEW REGULATOR VALVES FOR SMOOTH, POSITIVE CONTROL OF LIFT AND CROWD CYLINDERS

Important new features, combined with advantages proven by thousands of users, add up to more production for your digging dollar! The Sherman Hydraulic Power Digger is designed and built for that wide range of job requirements beyond the economical use of hand labor and below the efficient use of larger equipment. Yes, between the smallest and largest jobs, you'll find there's always a place for your Sherman Power Digger! Ask your nearby Sherman dealer for an on-the-job demonstration today. Write for free literature, Dept. U49.

FREE Literature on new features. Write for your copy now.

Sherman PRODUCTS, INC. ROYAL OAK, MICHIGAN

Designed, Engineered and Manufactured jointly by SHERMAN PRODUCTS, Inc., Royal Oak, Mich. WAIN-ROY CORPORATION, Hubbardston, Mass. Patent No. 2,303,825. Other patents pending.

FASTER LOADING, SAFER HAULING with a TRANSPORT TRAILER

MODEL XTT TANDEM TILT TRAILER. Reduce loading time . . . increase production time of heavy, slow-moving construction equipment! In a matter of minutes one man can load and secure machinery for job-to-job hauling with a TRANSPORT TRAILER Model XTT Tandem axle Tilt . . . capacities 15 through 20 tons. Two double-acting hydraulic cylinders, automatic platform lock give maximum tilt control and load security. Gooseneck type tilt trailer (Model GXTT) also available.

WRITE FOR COMPLETE INFORMATION

TRANSPORT TT TRAILERS INC. CEDAR RAPIDS IOWA, U.S.A.

SALES AND SERVICE . . .

Continued from page 148

nounced. He assumed his new duties on September 1 as a special assignment field man.

Colorado Fuel & Iron Corp: Forest S. Burtch has been appointed product sales manager of the newly formed Construction Materials Department of the John A. Roebling's Sons Corp., a subsidiary of Colorado Fuel and Iron. Elmer A. Trask has been named to succeed Mr. Burtch as Wire Rope sales manager.

Symons Clamp & Mfg. Co.: Expansion of two southern sales territories has been announced. The state of Louisiana has been added to the territory of Vernon L. Mock, Oklahoma City, Okla., who also represents Symons in Texas, Arkansas and Oklahoma. Mississippi has been added to the territory of William Nailen, Birmingham, Ala., who will continue to represent Symons in North and South Carolina, Alabama, Georgia and Tennessee.

Flexible Steel Lacing Co.: John P. Ramsey has been elected vice-president and sales manager.

Hewitt-Robins Incorporated: F. L. Griffith, Jr., was promoted to the newly created post of general sales manager of the rubber and conveyors divisions, with headquarters in Stamford, and F. W. Blanchard, promoted to the newly created post of manager of operations of the industrial rubber division in Buffalo.

Dayton Pump & Mfg. Co.: Donald Paulson has been appointed field service supervisor and Ralph J. Krohn, Jr., has been made district sales representative for the state of Texas.

E. D. Bullard Co.: Has announced that Joseph L. Polizoto has been appointed manager of the firm's Los Angeles office.

International Harvester Co.: Has announced the appointment of Ralph M. Buzard as manager of the company's motor truck sales department. He succeeds W. K. Perkins, who will become staff assistant to the vice-president, working on special assignments.

LeTourneau-Westinghouse Co.: W. E. Hendricks, who has served as assistant to the general sales manager since last June, has been named domestic sales manager; Lloyd Rager has been appointed sales promotion manager.

Homelite Corp.: R. J. "Ray" Marschalk has been appointed Chicago district sales manager. In his new position, with headquarters at 2409

(Continued on page 154)

LOOK JOE!...in SECONDS

A... Clipper MASONRY SAW ...WILL CUT THE HARDEST BRICK–STONE–TILE!*

*and at the lowest cost per cut

AND A... Clipper "SAILS RIGHT THRU" MASONRY SAW

...will PAY FOR ITSELF from the SAVINGS in TIME and MATERIAL

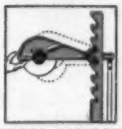
HERE'S WHY!...The DUSTLESS Clipper operates right beside your bricklayers because the Clipper is PORTABLE... easily moved from basement to roof. One Clipper Model HD with a Clipper Diamond Blade will do the cutting of 3 ordinary abrasive saws! This is possible ONLY with such Patented Clipper features as...the Pressure Equalizer Spring, the Famous Select-A-Notch, Water Application System, and Adjust-A-Cut which makes possible One-Spot Operation.

LOOK FOR THE BRIGHT ORANGE COLOR AND THE TRADE-MARK CLIPPER!

MR. CLIPPER

Only with These Patented Clipper Features is Masonry Cutting Economical...

PRESSURE EQUALIZER



SELECT-A-NOTCH

WET OR DRY PUMP

IT'S YOURS ON...FREE TRIAL!

ORDER TODAY... on FREE TRIAL. Discover for yourself how CLIPPER...will increase your profits by increasing your production at reduced costs. CLIPPER'S "On the Job" FREE TRIAL guarantees you satisfaction at no obligation!

OUR ONLY BUSINESS FOR NEARLY 20 YEARS... MASONRY & CONCRETE SAWING!

The unqualified Clipper guarantee of satisfaction is backed by world-wide experience, the ability to select the finest materials, and the "know-how" to put them together.

TODAY!...Try the New—Faster Cutting—Economical CLIPPER SUPERIOR BLADES

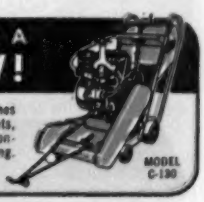
...guaranteed to "Consistently Provide the fastest cut...at the lowest cost...with the greatest ease!" Clipper alone can supply *all* specifications of Abrasive, Diamond and "CBR" (Break-Resistant) Blades to accurately meet your requirements. INVEST IN CLIPPER and YOU'LL GET RESULTS!

Clipper

SAW BEFORE BREAKING WITH A CLIPPER CONSAW!

Save up to 50% in labor and material. Saw repair patches—gas, water, sewer and air line trenches in floors, streets, walks, runways and highways. Save, too, by sawing contraction joints—eliminate costly hand forming and spalling.

5 MODELS, GAS OR ELECTRIC POWERED



MODEL G-130

SAME DAY SERVICE FROM YOUR NEAREST FACTORY BRANCH—

MR. CLIPPER

KANSAS CITY 8, MISSOURI

COAST TO COAST

- PHILADELPHIA
- ST. LOUIS
- CLEVELAND
- DETROIT
- AUSTIN, TEX.
- CHICAGO
- LOS ANGELES
- BOSTON
- HOUSTON
- MILWAUKEE
- ST. PAUL
- INDIANAPOLIS
- NEW YORK
- PITTSBURG
- SAN FRANCISCO
- CINCINNATI
- ATLANTA
- WASHINGTON, D.C.
- BIRMINGHAM
- CHARLOTTE, N.C.
- DALLAS
- KANSAS CITY

IN CANADA – P.O. BOX 476, WINDSOR, ONTARIO

SOLD ONLY DIRECT FROM FACTORY BRANCHES

MAIL COUPON NOW

CLIPPER MANUFACTURING CO.
2809 E. WARWICK • KANSAS CITY 8, MO.

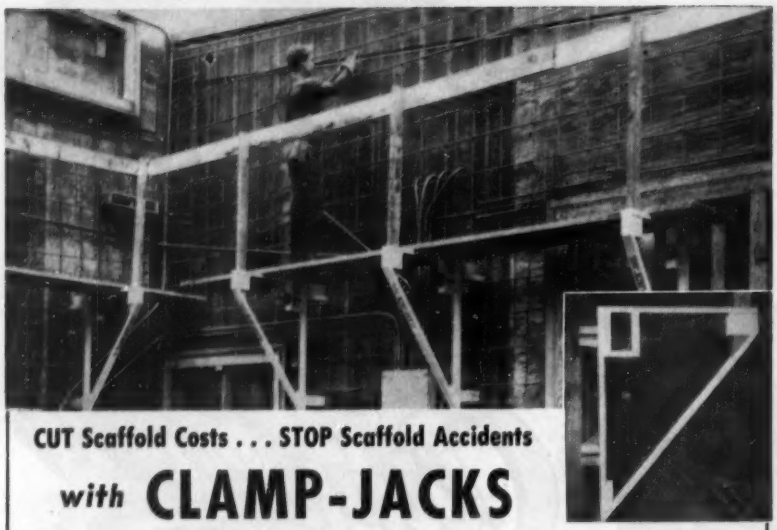
Send FREE Literature and Prices on:

- ☐ CLIPPER MASONRY SAWS
  - ☐ DUSTLESS MODELS
  - ☐ DRY ONLY MODELS
- ☐ CLIPPER CONSAWS
- ☐ CLIPPER ABRASIVE BLADES
  - ☐ WET ☐ DRY
- ☐ CLIPPER DIAMOND BLADES (97)

COMPANY_____

ADDRESS_____

CITY_____ STATE_____



CUT Scaffold Costs . . . STOP Scaffold Accidents

with **CLAMP-JACKS**

Clamp-Jack scaffold costs are 1/3 to 1/4 that of standing type whether you build a small one-story warehouse or a giant hydrogen bomb plant. Saves time and materials. Readily adapts to every phase of work . . . erection of first and second form walls, placing reinforcing steel (large photo), stripping forms and finishing walls. Each Clamp-Jack bracket safely supports a one-ton load and cannot be dislodged accidently because it *bolts* to walers (see inset) or rods left in concrete.

Write for detailed information to

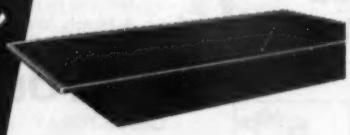
CONTINENTAL SCAFFOLDING CO.

P. O. Box 2551, Sacramento, California

Dealer Inquiries Invited

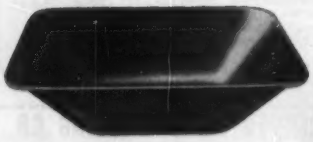
JACKSON MIXING BOXES and MORTAR PANS

JACKSON



MIXING BOXES

Sides and bottom formed from single sheet of steel. Top corners reinforced by rounded malleable castings. Top edges are flanged out and down for reinforcing and forming a good hand hold.



MORTAR PANS

Pressed from 16 gauge steel with reinforced edges. Lightweight, easy to clean and handle, non-leakable. Rounded corners for safety.

THE RIGHT COMBINATION FOR FAST, EFFICIENT MORTAR WORK

Jackson

MANUFACTURING COMPANY

HARRISBURG, PENNA.

Oldest and Largest Wheelbarrow Maker in America

SALES AND SERVICE . . .

Continued from page 150

Lake St., Melrose Park, Ill, Mr. Marschalk will be responsible for the operation of Homelite's Chicago district sales office and for the supervision of Homelite field representatives in Milwaukee, Wisconsin, Bloomfield, Ill. and Melrose Park, Ill. Also announced was the appointment of R. S. "Bob" Kennedy as manager of the Melrose Park branch office where he will take charge of all local sales in the Chicago area.

In the Main Office

American Hoist and Derrick Co.: Elected Harold O. Washburn, former president, to chairman of the board. John E. Carroll, former vice-president of sales, was elected president.

Vibro-Plus Products, Inc.: Tage Jonsson has been named vice-president and general manager.

Universal Atlas Cement Co.: Blaine S. Smith retired as president and was succeeded by Charles B. Baker, executive vice-president.

Special Mention

The Byers Mfg. Co.: This is a new corporation which has taken over the business of The Byers Machine Co. of Ravenna, Ohio. This has entailed no change in management or policy, and is solely a transfer of assets to the new corporation.

The Sisalkraft Co.: Announces a merger with its manufacturing division, The American Reenforced Paper Co. The organization will be renamed American Sisalkraft Corp. and will move certain key personnel to its plant headquarters in Attleboro, Mass. Regional sales offices will remain in Chicago, New York and San Francisco.

The Baker Mfg. Co.: Has awarded a contract to the Luria Engineering Co. for a new 40,000-sq ft manufacturing plant to be erected on a 20-acre tract at Beardstown, Ill. The new factory will supplement production at the company's main plant in Springfield, concentrating on the manufacture of snow plows, but it will be equipped to produce the company's other products when needed.

Association Activities

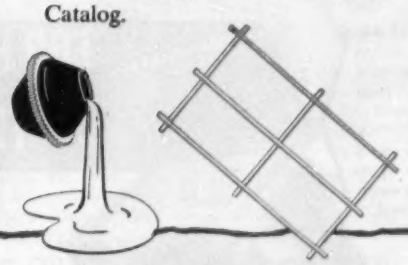
Construction Industry Mfrs. Assn.: Announces the election of officers for 1954 as follows—President, Frederick Salditt, Harnischfeger Corp.; 1st vice-president, Gail E. Spain, Caterpillar Tractor Co.; 2nd vice-president, Kenneth Lindsay, Iowa Manufacturing Co.; secretary-treasurer, I. W. Lloyd, The Ohio Oil Co.; and executive vice-president, Harold F. Hess.

Get longer lasting pavements at lower cost..... with American Welded Wire Fabric

PREFABRICATED American Welded Wire Fabric strengthens and increases the life of concrete pavements at lower cost than other types of reinforcement. A survey of more than 2,000 miles of concrete pavements throughout the United States proved this.

This survey also proved that Welded Wire Fabric—with many small steel members spaced closely together—does a better job of reducing the rate of cracking than any other reinforcing material.

Write to our nearest sales office for complete information. Ask for your free copy of the American Welded Wire Fabric Catalog.



GET A JUMP ON THE WEATHER

order your Wire Fabric now!

When the weather breaks next spring, you will want to dig in *at once* on all important construction jobs. You will need plenty of American Welded Wire Fabric on hand ready for immediate use.

The best way to be sure of having enough is to stock up *now* on the sizes and types you will use.

Get in touch with your local supplier today.

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION, GENERAL OFFICES: CLEVELAND, OHIO

COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS

TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

EVERY TYPE OF REINFORCED CONCRETE CONSTRUCTION NEEDS

U·S·S AMERICAN WELDED WIRE FABRIC

UNITED STATES STEEL

Ford Triple-Economy 1954 Trucks

FORD "TRIPLE-ECONOMY" TRUCKS for 1954: "More powerful, more durable and more economical."

FORD MOTOR CO. announces its new line of trucks for 1954 by highlighting five new truck lines.

Quick facts on the new trucks are:

5 new truck lines

24 New Series . . . more than 220 Models

G.V.W. rating from 4,000 to 40,000 lb

G.C.W. ratings up to 60,000 lb.

15 wheelbase lengths for custom-built bodies from 5½ to 19 ft long

5 new overhead-valve engines up to 170hp

2 Ford, 3-man Driverized cabs

Ford has also come out with the first tandem axle units ever built by Ford. Called series T-700 and T-800, the new units have gross combination weights to 60,000 lb.

The new engines range from 223 to 317 cu in. displacement and develop from 115 to 170 hp. These engines have been under development for 6 yr and have been driven more than 600,000 mi, plus 50,000 hr of breakdown laboratory tests under full throttle and load conditions.

Other features are power steering, Fordomatic transmissions, depopper valve for less backfiring and longer engine life.

Specifications of the New Ford Truck Engines Include:

Engine	Displacement	Horsepower	Torque	Bore	Stroke	Ratio
Cost Clipper Six	223 cu in.	115 @ 3900 rpm	193@1000-2200	3.62	3.60	7.2
Power King V-8	239 cu in.	130 @ 4200 rpm	214@1800-2200	3.50	3.10	7.2
Power King V-8	256 cu in.	138 @ 3900 rpm	226@1900-2400	3.62	3.10	7.2
Cargo King V-8	279 cu in.	152 @ 3800 rpm	246@1800-2400	3.56	3.50	7.2
Cargo King V-8	317 cu in.	170 @ 3900 rpm	286@1700-2300	3.80	3.50	7.2

All Galion All-steel dump bodies are now made of high tensile steel—up to 25% lighter and stronger than ordinary dump body steel.

GALION MODEL 880 heavy duty hydraulic hoist and Model 12 contractors body easily handle 10½ to 15½ ton loads.

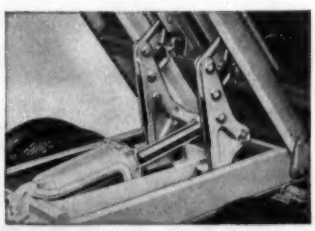
FOR HYDRAULIC HOISTS AND DUMP BODIES, THE *BUY* WORD IS *GALION*

If you want built-in ruggedness, *extra* lifting and *extra* carrying capacity . . . always specify Galion! Galion hydraulic hoists and dump bodies work longer with less maintenance and lower operating costs. With Galion, jobs begin on time, continue steadily without interruption . . . end on schedule.

For big jobs (or for little ones), Galion manufactures a complete line of standard and heavy duty hoists and dump bodies to meet every construction need. And . . . if you need extra heavy duty or special units to fill unusual requirements, Galion will be glad to design and build them for you.

A-7202

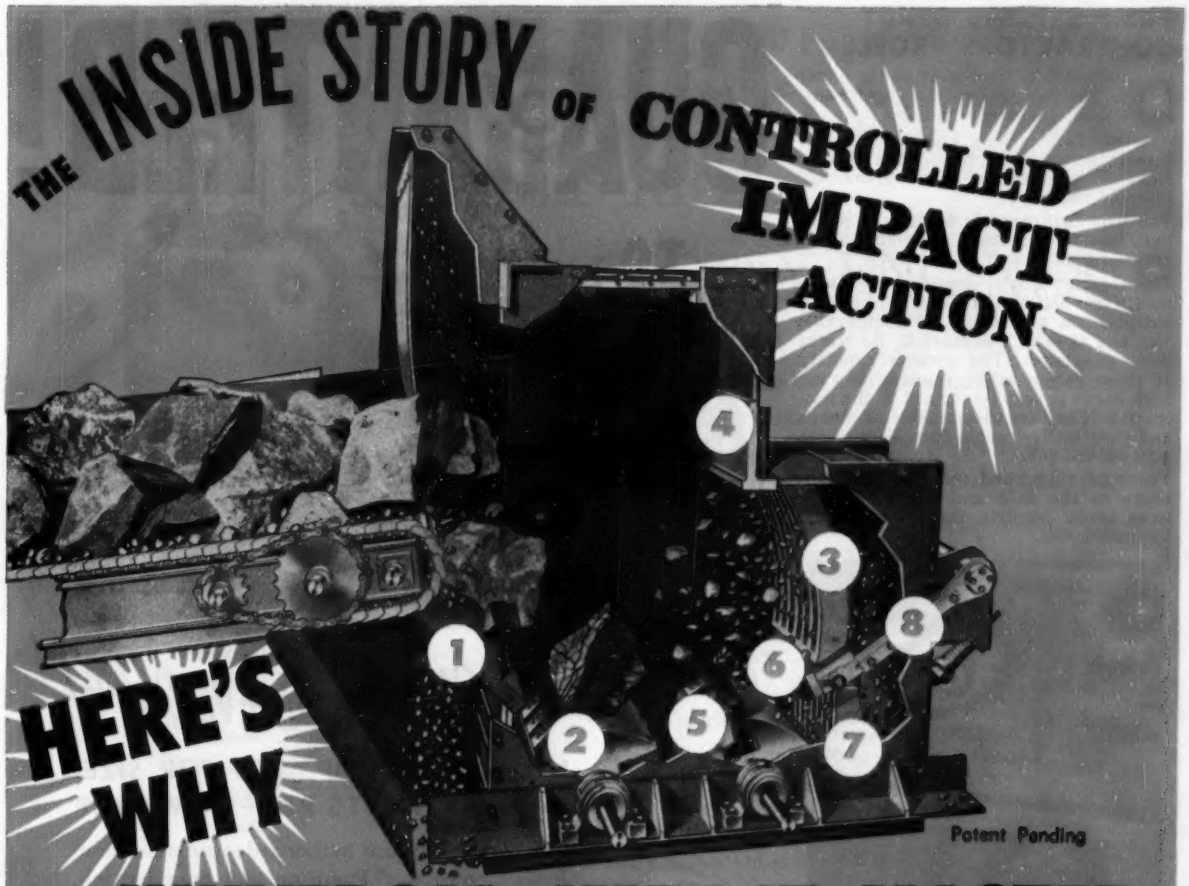
GALION MODEL 700 hydraulic hoist with steel subframe, ideal for loads of 6½ to 8½ tons.



JUST SEE YOUR NEAREST GALION DISTRIBUTOR—TODAY!

THE GALION ALLSTEEL BODY COMPANY • GALION, OHIO

THE INSIDE STORY OF CONTROLLED IMPACT ACTION



HERE'S WHY

THE UNIVERSAL IMPACT MASTER

gives you top capacity . . . lower costs . . . greater control of finished product size

Adjustable feed plate (1) guides in-coming rock at proper angle into first rotor hammer circle (2). Infed rock is intercepted in motion, exploded instantly by the terrific impact of the rotor hammers and simultaneously projected toward deflector screen grate (3) where finished sizes are immediately discharged.

Oversize particles are deflected upwards, intercepted by feed chute back plate (4) and guided downward into the path of the second rotor hammer circle (5) where they are exploded and projected toward the bottom half of the deflector screen grate and the lower screen grate (7) for immediate discharge.

Both rotor hammers rotate in the same direction toward the rear, promoting fast feeding and keeping all material flowing toward the discharge for top capacity.

Finished product sizes are controlled by the speed of the rotor hammers, and by simple adjustments (8) of stripper bar (6) and lower screen grate.

By controlling the infed rock and directing its flow, the breaking is accomplished by the impact of rotor hammers upon the rock. This reduces wear and makes possible the more uniform gradation cubical aggregate.

GET THE FULL PROFIT-MAKING STORY

Write for literature. Get complete details on the Universal Impact Master. Learn all about its high ratio of reduction which eliminates secondary crushers and auxiliary equipment. Get top quality uniform gradation cubical aggregate and greater production of saleable finished sizes. Impact Masters are used in open and closed circuits for producing road-building and concrete aggregates, and can be adjusted for the simultaneous production of aglime when desired. They are available with capacities to 750 tons per hour. Write today.

UNIVERSAL ENGINEERING CORPORATION *Subsidiary of* **PETTIBONE MULLIKEN CORPORATION**

327 8th Street, Cedar Rapids, Iowa
Phone 7105

4700 West Division St., Chicago 51, Illinois
Phone Spaulding 2-9300

(Advertisement)

PUMP EXPERTS STUDY CONTRACTORS' PROBLEMS

Contractors who have ever had a pump fail on the job realize the importance of choosing the proper pump.

A pump failure may hold up the job, cause men to be idle, tie up other equipment or even prevent finishing the contract on time.

The best insurance is to have a pump that has proved itself on many tough assignments.

The Gorman-Rupp Company of Mansfield, Ohio claims that their pumps will out-perform any pump of comparable size and type on the market. So states their guarantee. The greater capacity of these pumps when working against high heads is very important to the contractor. They are the simplest of pumps and practically trouble-free. They never quit on the job.

Years of study and research by engineers in the field and the laboratory have made possible these claims and the guarantee.

FIELD NOTES on the BEST DIAPHRAGM PUMP EVER BUILT!

With mud, sludge and water seeping into a 28 foot pit for an industrial sewer installation, W. W. Purdy Construction Company of Mansfield, Ohio put this Gorman-Rupp 3" diaphragm pump 3D-8R6, on this job at the Empire Steel Corporation factory at Mansfield.

A junction of several six-foot storm sewer tiles was necessary. Rapidly rising water in the 12x22 foot pit flooded out workmen and 18 inches of mud and slime accumulated in the pit. The Gorman-Rupp diaphragm pump cleaned out the pit and had the workmen back on the job in 30 minutes.

This job involved an 18 foot suction lift, 8 foot discharge elevation and about 35 feet of horizontal 3" hose discharge line into an open manhole. No attention was necessary except fuel supply and starting or stopping when required. The unit is self-priming. It was necessary to operate the unit several minutes every hour.

THE GORMAN-RUPP COMPANY
MANSFIELD, OHIO

GUARANTEED!

TO PUMP MORE WATER

GORMAN-RUPP
125 M PUMP

and doing it on-the-job EVERY DAY!

NO OTHER PUMP, SIZE FOR SIZE, CAN EQUAL ITS PERFORMANCE

Our distributors are authorized to put a Gorman-Rupp Contractors' Pump on any pumping job, any time, anywhere, alongside any other make pump, size for size. The Gorman-Rupp pump is guaranteed to pump more dirty water more hours, using less gasoline and to prime quicker than any other self-priming pump. If it isn't the best all-around pump, our distributor will accept the return of the Gorman-Rupp pump and pay the user any installation expense incurred.

Only the utmost confidence in the product could justify this guarantee.

We can furnish you with any size of self-priming centrifugal pump ranging in capacity from 1½ in., 5,500 G.P.H. to the powerful 10 inch, pumping 240,000 G.P.H.

Ask for Contractors' Pump Bulletin No. 4—CP-11

GORMAN-RUPP PUMPS
SOLVE YOUR PUMPING PROBLEMS

GORMAN-RUPP
SELF-PRIMING
CENTRIFUGAL PUMPS

THE GORMAN-RUPP COMPANY
MANSFIELD, OHIO

"DIRTY ENGINES ARE COSTLY ENGINES"

F. J. Hoagland,
Owner,
Elgin Yellow Cab Co.

"My engines were just too dirty when we took them down. And dirty engines are a sure sign you're not getting efficient use out of cabs." So Mr. Hoagland decided to try Phillips *66* Heavy Duty Motor Oil.

Here's what Phillips *66* Heavy Duty Motor Oil is doing for Elgin Yellow Cab Company. First and foremost, as Mr. Hoagland says, "We noticed that our engines were cleaner than before. We didn't get as much low temperature sludge. This alone added up to smoother cab performance and longer engine life." Overhaul has been stretched out to between 85,000 and 125,000 miles. Now valves are seldom worked over except at overhaul time.

Mr. Hoagland sums it up with, "Phillips *66* Heavy Duty Motor Oil is the best oil I've used. I'm satisfied it helps cut down our maintenance costs and gives us more efficient use of our cabs."

And what this great oil is doing for Elgin Yellow Cab Company, it can do for you. No matter what kind of fleet you operate, investigate—find out how you can take advantage of Phillips *66* Heavy Duty Motor Oil.

Taxicabs traveling some 7,000 miles a month need the protection of top quality Phillips 66 Heavy Duty Motor Oil.

Set up your own test. We will be glad to help you plan it without obligation. Write to: Sales Department, Phillips Petroleum Company, Bartlesville, Oklahoma.

Oil for the Engines of Commerce

PHILLIPS 66 HEAVY DUTY MOTOR OIL

CONSTRUCTION EQUIPMENT NEWS

Henderson Loader on Oliver OC-3

This loader is new to the industry. Designed and built for the Oliver OC-3 tractor, this Henderson Model F loader, has a bucket capacity of ½ yd. It is powered with a front-end pump. It is equipped with automatic bucket-leveling device and positioner.—**Henderson Mfg. Co., Cedar Rapids, Iowa**

Torque Converter—Pettibone

A 1-cu yd front-end loader has been added to the Pettibone Speedall Front-End Loader line. Powered by either gasoline or diesel, this new smaller capacity loader is available with torque converter. High dump and long reach combine to give high output and faster cycles.—**Pettibone-Mulliken Corp., Chicago, Ill.**

Jaeger Load-Plus Loader

When this loader meets resistance from the material pile, it creates a downward pressure on the front wheels, which are driven wheels, and provides additional traction, according to the manufacturer. It steers from the rear, with all controls hydraulic. It's a 1-cu yd capacity and dumps at 8 ft 2 in.—**The Jaeger Machine Co., Columbus, Ohio**

Gas-Powered Lift Truck

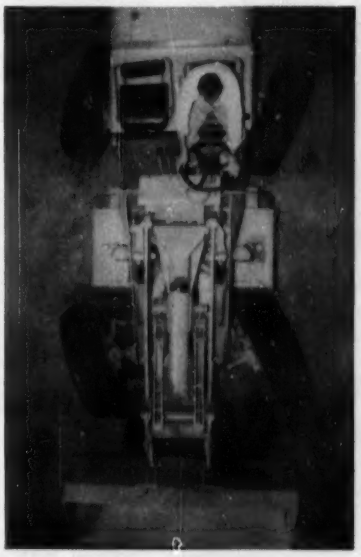
This 4,000-lb fork truck designed for outside or rough surface work will travel up to 14 mph. Claimed to cost about 25% less than similar trucks of same capacity, this Yardloader features a new low-cost gasoline engine. Its high travel speed makes it valuable for yard-handling jobs over large areas.—**The Baker-Raulang Co., Cleveland, Ohio**

. . . About Loaders

Some contractors call them just loaders. Others distinguish between the rubber-tired and track-type tractor types, and some refer to loaders as just material handlers. Regardless of what they are called, loaders are a mighty important tool in the contractors spread. They are real producers and money-makers. Here are a few loaders, some new, others with improvements that have appeared in the last couple of months.

Pettibone Speed Swing Loader

A 180-deg boom swing permitting discharge of the load left or right, without moving loader out of loading position line, is featured on the new Pettibone Speed Swing Loader. Available in 2- or 4-wheel drive, ¾- or 1- cu yd bucket, the loader uses a torque transmission system. It has a discharge height of 15 ft. over fully raised bucket.—**Pettibone-Mulliken Corp., Chicago, Ill.**

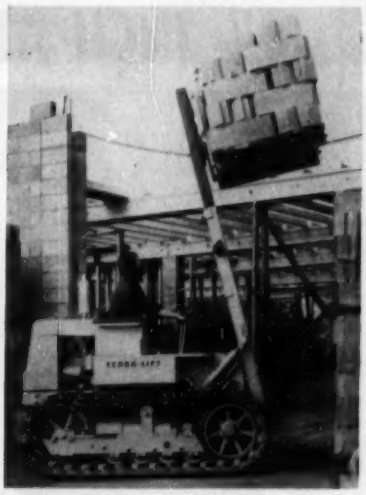


Four-Wheel Steering

This Shoveloader, uses the same principle as a hook-and-ladder fire truck to turn corners—four-wheel power steering. It will turn on inside radius of only 7 ft, 6 in.—**Baker-Lull Corp., Minneapolis, Minn.**

DoMor D2 Loader

This DoMor ½-cu yd loader for the Caterpillar D2 tractor features an easy-to-detach and easy-to-mount bucket. It has lifting height of 11 ft and will dump at 9 ft 4 in. from ground line to lowest point of bucket in dumped position. The loader weight of 1,500 lb is carried on the track roller frames. Recommended for light materials, the loader fits the "U" series of the Model D2—50-in. gage with 16-in. shoes. — **Ulrich Products Corp., Roanoke, Ill.**



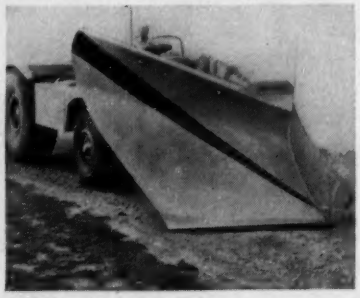
Multiple-Purpose Loader

This Terra-Lift M3 fork lift can be converted within a few minutes from a 3,000-lb capacity fork lift into a ¾-cu yd bucket loader, 6-ft angling dozer or towing tractor of 30-hp drawbar—**American Tractor Corp., Churubusco, Ind.**

12-FT POCKET TAPE—Here's a brand new pocket tape available in 12-ft size. Not only does it have 2 ft more than the conventional type, but it also contains a second scale, a foot-and-inch scale, usually found on long tapes. The conventional scale is calibrated in 16th of an inch and is marked off from 1 to 144 in. The other scale is calibrated in eighths and is marked off 12 in. to the foot, foot markings being given in white on black island backgrounds. This new 12-ft Evans "White Tape" sells for $1.89.—**Evans & Co., Elizabeth, N. J.**

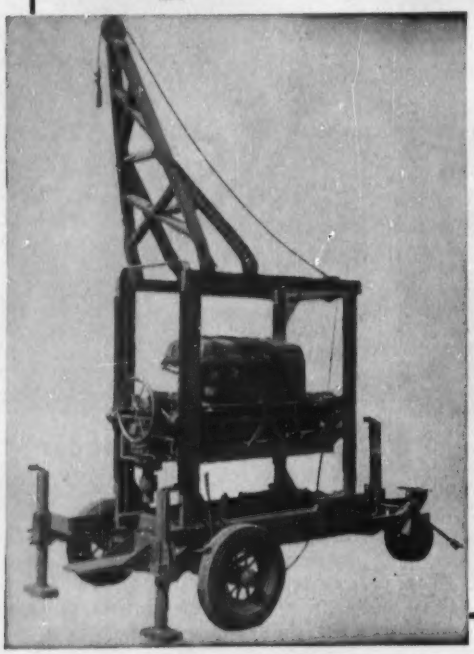
DIESEL - POWERED PORTABLE COMPRESSOR—This is a 600-cfm diesel-powered portable compressor known as the Davey Super Chief 600. It is available in both skid and 4-wheel trailer mounting styles and powered by a Hercules Model DFXD engine. It has four low-pressure cylinders with 8-in. bore and 4-in. stroke and two high-pressure cylinders with 6⅝-in. bore and 4-in. stroke. The 4-wheel trailer, as illustrated, is 150 in. long, 75 in. wide, and 95 in. high. The weight is 9,300 lb. Skid dimensions are 150 in. by 63 by 69 in. The skid weight is 8,700 lb. The Davey line of compressors includes portable units of 60 to 600 cfm sizes.—**Davey Compressor Co., Kent, Ohio**

ELECTRIC IMPACT TOOL—Ingersoll-Rand has announced a new impact tool which is designed to save time and effort on nut running, tapping, screw driving, reaming, drilling, etc. This tool is rated for nut running up to ¼-in. bolt size. It weighs only 5 lb and is 9¾ in. long and has side-to-center distance of 1 15/32. It is claimed the motor will not burn out by overloading and will operate from any 110-v source ac or dc.—**Ingersoll-Rand Co, Phillipsburg, N. J.**



V-TYPE SNOW PLOW—A V-type snow plow that mounts on the front bumper of large wheel-type tractors is now available to help provide high-speed snow clearance from highways and streets. The plow consists of a moldboard, removable cutting edges, adjustable shoes, removable nose-piece, adjustable push arms, lever arm, lift arm, lift arrangement, and the necessary bolts and pins for mounting on the front of a Caterpillar DW10 tractor. It is manufactured by **Balderson, Inc., Wamego, Kan.**

5 or 6 INCH AUGERS drill up to 80 feet
4¼ INCH AUGERS drill to greater depths



Parmanco
MODEL 51V VERTICAL DRILL
HEAVY DUTY • 4 SPEEDS AND REVERSE

Here is a mobile drilling tool, built around a 40 h.p. Ford motor and to user's conditions and requirements. In use today in many fields, it is speeding and simplifying jobs.

In a recent field test an accurate sample was taken in 30 minutes thru 25 feet of overburden. This was done adjacent to an identical test hole that had taken 8 days to drill and sample by hand.

This Model 51V has four auger rotating speeds and reverse. It has proved its ability to meet the requirements of the general prospecting field where it is not necessary to drill solid limestone.

This machine (Model 51WV) is also built around a Wisconsin 25 h.p. air-cooled motor, 4 speed transmission and self-starter.

PARIS MANUFACTURING CO. PARIS, ILL.

for FASTER handling and placing of concrete!

THERE ARE MANY EXTRA ADVANTAGES for you in the completeness of the GAR-BRO line. Every item of equipment is matched to work together. For instance, the clearance of floor hoppers and portable hoppers matches the height of carts and Power-carts. Only Gar-Bro makes such a wide variety of types and sizes of concrete buckets. All have patented double clamshell gates . . . all have attachments . . . and all have the fittings for easy attaching.

Whether the placing job is deep down into the narrow confines between reinforcing steel, or 40 feet under water, or high on the 54th floor of a concrete building, Gar-Bro Concrete Handling Equipment can help you deliver and place concrete easier, faster and better.

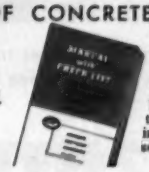
See your Gar-Bro dealer and be sure to ask for your free copy of the Gar-Bro Manual and Concrete Equipment Handbook.

it's GAR-BRO

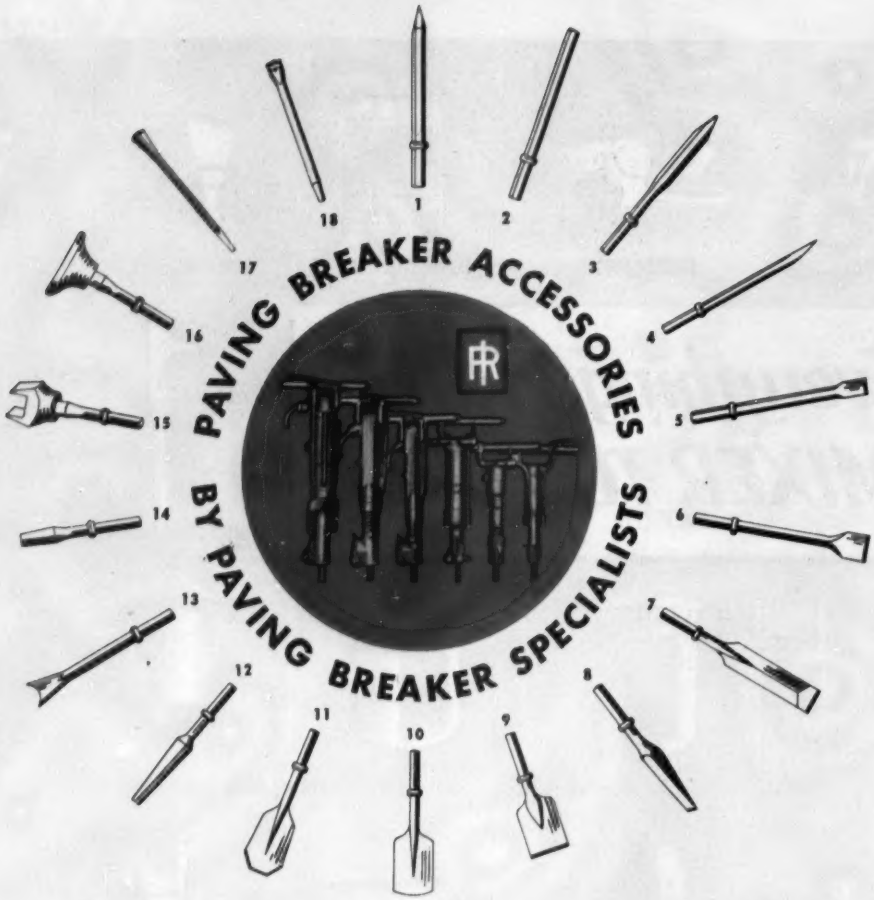
EQUIPMENT · GAR-BRO · ENGINEERING SERVICE

THE WORLD'S MOST COMPLETE LINE OF CONCRETE HANDLING EQUIPMENT

GAR-BRO MANUFACTURING CO. • Los Angeles, Calif. • Peoria, Ill. • General Offices: 2415 E. Washington Blvd., Los Angeles 21, Calif.



GET THE FACTS! Write for your free copy of the new 56-page "Manual with Check List for Handling and Placing Concrete Efficiently." Includes tables, references, correct and incorrect methods, unusual jobs solved and other data.



Here's why **IT WILL PAY YOU** to buy your paving breaker accessories from the leading manufacturer of Paving Breakers

THERE'S MORE to a paving breaker tool than just a piece of steel – much more! The work-producing performance of the breaker depends largely on the accessories used.

That's why Ingersoll-Rand, leading manufacturer of paving breakers, takes extra care to build *extra dependability* into every item of its complete line of tools and accessories.

Take the steel, for example. I-R supervision and control begin right at the mill where the steel is made. This special tool steel, which must meet rigid specifications, costs more of course. But it's *worth* more in terms of longer tool life – lower replacement costs and smaller inventory. And the same exacting quality control is followed through in every step of manufacture – from heat treating and forging to final ready-for-use tempering.

This extra care and precision *does* make a difference. Users report that I-R accessories have reduced replacement costs by 50%. For complete information on longer-lasting I-R paving breaker accessories, ask for your free copy of Bulletin No. 4126.

(1) Moil Points	(2) Moil Point Blanks	(3) Wedge Points
(4) Curved Chisel Bits	(5) Narrow Chisel Bits	(6) 3" Chisel Bits
(7) 3"x12" Digging Chisels	(8) 2"x12" Wedges	(9) 5" Asphalt Cutters
(10) 5½" Clay Scoops	(11) 3" and 5" Flat Picks	(12) Boulder Breakers
(13) Broaching Steels	(14) Detachable Shanks	(15) Sheathing Drivers
(16) Tamping Pads	(17) Star Drills	(18) Corset Steels

Ingersoll-Rand
11 Broadway, New York 4, N. Y.

983-5

ROCK DRILLS • AIR TOOLS • DIESEL AND GAS ENGINES • COMPRESSORS • CENTRIFUGAL PUMPS • VACUUM EQUIPMENT

ATHEY PRODUCTS CORPORATION

selects USS HIGH STRENGTH STEELS to give toughness and strength to rugged, heavy-duty construction equipment

Athey Products Corporation has selected USS TRI-TEN steel to give vital parts of their new Side Dump Trailer the stamina to stay on the job. Says Athey's Chief Engineer R. W. Kling, "Good weldability, workability, lower weight to strength ratio, good impact properties and good resistance to abrasion are the specific advantages of USS HIGH STRENGTH STEELS in this equipment."

On their Force-Feed HiLoader, the Athey Products Corporation again relied on the outstanding properties of USS HIGH STRENGTH STEELS to give good abrasion resistance, plus extra strength, for auger flights and discharge conveyors. This time the requirements were best served by USS COR-TEN steel!

● These USS HIGH STRENGTH STEELS—USS TRI-TEN, USS COR-TEN and USS MAN-TEN—allow many manufacturers, like Athey, to build maximum strength and toughness into parts ordinarily prone to failure. With these steels—used singly or in combination—high resistance to fatigue, wear, abrasion and impact can be imparted to all types of earth-movers. And if your equipment needs resistance to the destructive effects of sub-zero temperatures and corrosive conditions, these properties, too, can be added with USS HIGH STRENGTH STEELS.

And here's another advantage . . . all USS HIGH STRENGTH STEELS have a yield point 50% higher than ordinary structural carbon steel. That means by the use of these steels you can materially increase the strength of parts *without increasing their weight*. Or you can use them in lighter sections and *reduce equipment weight* while retaining the same strength as with carbon steel, thus saving substantial amounts of steel.

Contact our nearest office for more information on the use of USS HIGH STRENGTH STEELS to make equipment last longer and do more.

UNITED STATES STEEL CORPORATION, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND • COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
NATIONAL TUBE DIVISION, PITTSBURGH • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. • UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS HIGH STRENGTH STEELS

USS

4-414

UNITED STATES STEEL

THE ACTUAL IS LIMITED: THE POSSIBLE IS IMMENSE
NEW LINCOLN PLANT CREATED BY INCENTIVE-INSPIRED CO-ACTION IN DEVELOPING POSSIBILITIES IN PRODUCT
© LE Co. 1953

Welded design is credited with speeding construction of this 15-story, 48' by 98' structure as:

575 TON FRAME ADDITION IS COMPLETED IN LESS THAN TEN WEEKS

RISING costs of materials and labor can be offset by designing structures to take full advantage of arc welding. First of all, savings in steel of 10 to 20 per cent are possible through rigid frame, continuous beam construction and elimination of rivets and elaborate splice plates. And, as shown in the recent construction of this multi-story addition, fewer erection manhours are needed, shortening construction time by a substantial amount.

In the 575-ton St. Vincent's hospital addition, structural steel members using clip angles are fabricated at low cost with welding. Clip angles are welded to beams and columns with single-pass welds. They are bolted in place, plumbed, then arc welded with Lincoln "Fleetweld 7" using "Shield-Arc" engine-driven welders. Columns adjacent to existing buildings are attached to existing steel at each floor simply by breaking through brickwork and welding an angle iron connection to the columns.

Architects: Eggers & Higgins; *Engineer:* Wilcox & Erickson; *General Contractors:* Vermilya Brown Company; *Steel Work:* Grand Iron Works, Inc.

Studies in Structural Arc Welding free on request.
Designers and Engineers write on your letterhead to Dept. 2701.

THE LINCOLN ELECTRIC COMPANY
CLEVELAND 17, OHIO
THE WORLD'S LARGEST MANUFACTURER OF ARC WELDING EQUIPMENT

PROOF... WELDED DESIGNS COST LESS TO BUILD

APARTMENTS

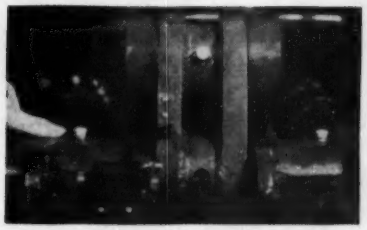
Fig. 1. Saves Over $30,000 *on 14 story framework for Broadview Apartments, Baltimore, Md. Steel tonnage is cut from 2045 to 1960 tons. Architects: Palmer, Fisher, Williams and Nes, Baltimore.*

GYMNASIUMS

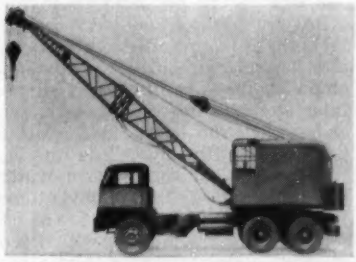
Fig. 2. 20% Less Steel *is needed because of rigid frame construction made possible by arc welding. Overall saving is 6 to 10 per cent. Consulting Engineer: David R. Graham, Tulsa, Oklahoma.*

DEPARTMENT STORES

Fig. 3. Cuts Steel Tonnage 15%. *Through welded structural design, it was possible to save 15% on steel in the framework for J. W. Robinson's new department store in Los Angeles. Architects: Pereira and Luckman and Charles O. Matcham.*



PLASTIC CAPS—Designed to protect high-pressure grease fittings, to help keep fittings clean and prevent dirt and coagulated grease from plugging the small openings, plastic caps are now available to contractors, manufacturers and owners of mobile equipment. Called Pro-Caps, the units are easily installed and will remain in place indefinitely under normal conditions. They can be used over and over again. The caps tested at 40 deg minus and up to 200 deg F proved effective in keeping dirt, water and oil from entering the lubricated area through the lube fittings. They are available in seven different colors to facilitate color coding of various lubrication points. **—YBF Corp., 626 Warner Bldg., Washington 4, D. C.**



ONE-MAN CRANE CARRIER—Here is a new crane carrier of the one-man type available for all makes of cranes in the 20- to 25-ton class, that can be used either for new and original equipment or for used crawler or truck types. The outstanding feature of this Cook Bros. crane carrier is that it has an independent power permitting independent travel and swing. Power plant is assembled on a sub-frame and consists of a 100-hp gasoline industrial engine, torque converter, 3-speed and reverse transmission, auxiliary transmission with emergency or parking brake. Operation of the Model CW-312 is from the operator's position in the crane cab and features hydraulic steering and air brakes. There are no hydraulic lines running from carrier to crane. Controls are operated by mechanical linkage. Utilizing its own power plant, there is no transmission of power between the carrier and crane. Crane travel gear, clutches, etc., are completely eliminated. Tests, according to the manufacturer, have proved that it will travel any place a tandem axle truck will go. Complete details for this unit may be obtained from **Cook Bros. Equipment Co., Crane Carrier Div., 3334 San Fernando Rd., Los Angeles 65, Calif.**

325° F. Solutions and Pressures to 400 lbs. Make Short Work of Grease, Oil, Dirt and Rust

This shop switched to a MALSBARY 300 heavy-duty cleaner for steam cleaning scrapers, tractors and dozers before painting. Its high pressures blast grease, oil, dirt and rust from 17½-yard scrapers in an hour or less. That's 3 times faster, reports methods engineer, than previous steam vapor cleaner did. And downtime is practically unheard of—this MALSBARY 300 works 8 hours daily, 5 days a week.

Why Malsbary Does More, Quicker

Cleaning equipment is much like washing your hands—the dirtier they are the more you need lots of solution (soap and water), heat and pressure. With MALSBARY exclusive patented pumping system you get all three—volume, heat, high pressure. For example, you:

Steam clean at 150-250 p.s.i. yet keep solution at 325°F.—an impossibility with other cleaners.

Rinse with 300-2100 gallons of warm water per hour.

Blast stubborn dirt with cold water at 400 p.s.i.

See for yourself—*fill in coupon NOW.*

Heavy-duty MALSBARY cuts average cleaning time to—
D6, D7, D8 . . . . . 1½ to 2 hrs.
Motor Grader . . . 3½ hrs.
Payloader . . . . . 45 minutes
Street Sweeper . . 2 hrs.

MALSBARY MANUFACTURING CO.
SINCE 1921

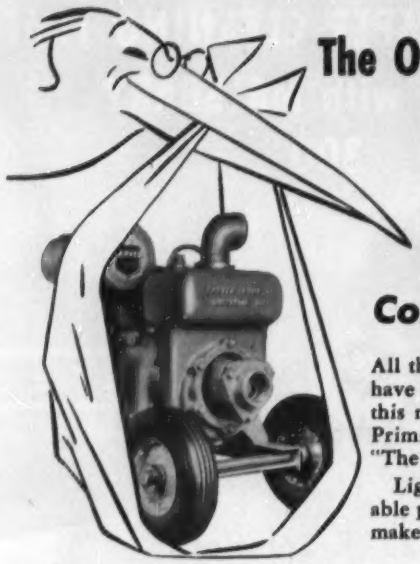
Room C2, 845 92nd Ave., Oakland 3, Calif.

Malsbary Mfg. Co., Room C2, 845 92nd Ave., Oakland 3, Calif.
I AM INTERESTED IN —
☐ On-the-job demonstration.
☐ Free booklets on MALSBARY Cleaners.
☐ "How To Make Efficient Use of Steam Cleaning" reprint.

MAIL TODAY!

NAME POSITION
BUSINESS
ADDRESS

46



The Outstanding Arrival of the Year

NEW CARVER

Contractor Pumps

All the important features contractors have wanted for years are built into this new great line of CARVER Self-Priming Pumps . . . truly in every way "The Contractor's Pump."

Lightning fast prime, really dependable performance and easy portability make them the standouts in the field.

Carver makes them all: 4000 G.P.H. to 250,000 G.P.H. Also diaphragm pumps.
See your CARVER DISTRIBUTOR.

CARVER PUMP CO., 1402 Hershey Ave., Muscatine, Ia.

CARVER
the quality name in pumps

Converts truck to truck-crane

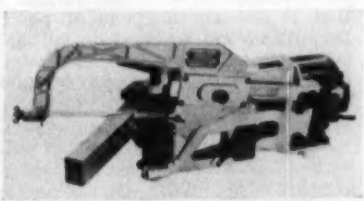
Pitman Hydra-Lift, new low-cost hydraulic crane, fits on the frame of almost any truck and converts it to a versatile, highly-mobile truck-and-crane! Lifting capacity is 6,400 pounds; hydraulic boom swings in a complete 180° arc, lifts through an arc of 100°, telescopes from 12 to 17 to 22 feet. Hydra-Lift requires only 40" behind the truck cab, leaving the truck bed free for normal loads. A truck equipped with Hydra-Lift retains its normal mobility; Hydra-Lift can be installed on a tractor-trailer hitch.

Write today for complete information and name of nearest dealer!

PITMAN MANUFACTURING COMPANY
300 W. 79th Terr. Room 200 Kansas City, Mo.

CONCRETE SHATTERER — This tool, designed to shatter concrete, has a curved shape blade with a tapered point that rides free during the breakage. According to the manufacturer, the points stay sharp three to five times longer than conventional tools and will not stick. It is also claimed that concrete breakage can be speeded up to as much as 50% more per man-hour with this tool. It is called the Sabur Point, and is made of special steel for maximum resistance to wear, shock, and the increased power of the new type breakers. It comes in two sizes, both with hexagon shanks—one, 1⅛x6 in., and the other, 1¼x6 in.—both under 16 in. under the collar.—**Brunner & Lay, Inc., 9300 King St., Franklin Park, Ill.**

WELLPOINT ELIMINATES GAUZE JACKET—A non-clogging, continuous slot is the outstanding feature of the "red Head" wellpoint for use in both tubular and drive wells. It also has no gauze jacket to rip, strip or puncture. A continuous V-shaped inlet slot has openings that cannot clog with sand—or silt. According to the manufacturer, this method permits several times more water-intake capacity than conventional points. The wellpoint is made of one metal, low carbon steel, which it is claimed eliminates electrolytic corrosion. It is available in two sizes, 1¾-in. OD, fitted with 1¼-in. pipe shank, and 2 7/16-in. OD, fitted with a 2-in. pipe shank.—**Edward E. Johnson, Inc., St. Paul 14, Minn.**



PORTABLE HACK SAW — This Hand-I-Hack, a 50-lb portable power hacksaw, cuts in any position, metal, plastic or fiber stock of 3 in. or less diameter at any angle from 45 to 90 deg. A new patented principle, whereby the saw blade draw-cuts and then lifts on its return stroke, eliminates the necessity for weights. The feature enables the saw to be operated vertically, horizontally, even upside down. The operation is fully automatic, shutting itself off after completing a cut. Saw blade speed is 115 strokes per min.—**Lipe-Rollway Corp., Emerson Ave., Syracuse 1, N. Y.**

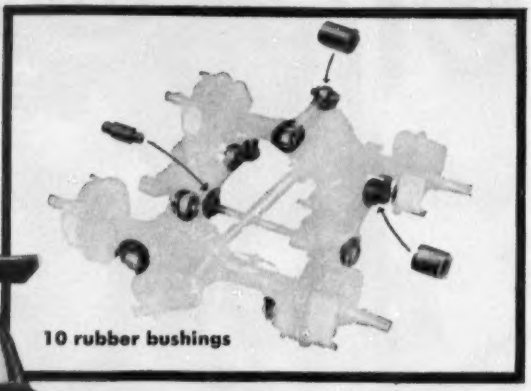
Now... set fastening studs wherever they're needed
MODEL 450 REMINGTON STUD DRIVER
Here's new economy . . . new speed in construction fastening! The Remington Stud Driver joins wood or steel sections to concrete or steel surfaces in seconds . . . easily sets as high as 5 studs a minute. Powerful 32 caliber charges drive studs arrow-straight. The tool's light weight—only 5½ pounds—simplifies handling wherever studs are needed.
New guards for specific uses now make the self-powered Remington Stud Driver more versatile than ever. These attachments take all the guesswork out of stud location . . . assure fast, accurate fastening for every job. Illustrated are just 4 of these special guards. For full information about the complete line and about the Remington Stud Driver, send the coupon below.
A complete line of guards for special applications
Guard for Structural Channel
Guard for Switch, Utility and Outlet Boxes
Guard for "Unistrut" Sections
Guard for Conduit Clips
Listed & Approved by Underwriters' Laboratories, Inc.
MAIL THIS COUPON TODAY
Industrial Sales Division, Dept. CME-2
Remington Arms Company, Inc.
939 Barnum Ave., Bridgeport 2, Connecticut
Please send me my free copies of the new booklets showing how I can cut my fastening costs.
Name
Position
Firm
Address
City State
"If It's Remington—It's Right!"
Remington
DUPONT

INTERNATIONAL LEADS AGAIN...

NEWEST, FINEST BOGIE

IN THE 6-WHEEL FIELD

The new INTERNATIONAL bogie provides a new exclusive torque arm design straddle mounted at axle and frame, for greatly increased strength, and new rubber bushings on torque arms, equalizing beams and radius rods for reduced road shock, and elimination of 10 lubrication points. A new self-contained brake and cylinder unit cuts servicing costs, offers greatly increased protection from damage in off-highway operation.



10 rubber bushings

Once again, INTERNATIONAL makes the big news in 6-wheel bogie design. Once again, the pioneer of 6-wheel development and 6-wheel sales leader for 19 straight years tops 'em all in features for efficiency, economy, and long life.

In today's INTERNATIONAL 6-wheelers you get everything that's new and everything that's best, plus such extra-value features as the famous, proved INTERNATIONAL power divider and third differential.

Ask your INTERNATIONAL Dealer or Branch for full facts . . . and a demonstration. You'll quickly see why —for off-the-road or over-the-highway—an INTERNATIONAL Truck with new INTERNATIONAL bogie is the world's best 6-wheel buy.

24 new 6-wheel models!

GVW ratings, 22,000 to 90,000 lbs. with new INTERNATIONAL bogie or trailing axle. Engines from 130 to 356 horsepower. Choice of gasoline or LPG power. Diesel engines available in models with GVW ratings of 30,000 lbs. and over. Transmissions, axle ratios for any needs. America's most complete truck line—170 basic models from ½-ton pickups to 90,000 lbs. GVW off-highway models.

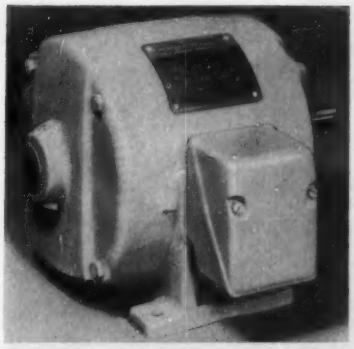
INTERNATIONAL HARVESTER COMPANY • CHICAGO

International Harvester Builds **McCORMICK®** Farm Equipment and **FARMALL®** Tractors . . . Motor Trucks . . . Industrial Power . . . Refrigerators and Freezers.

→ Get the News! Alex Dreier "Man on the Go," daily NBC Radio, sponsored by INTERNATIONAL Truck Dealers.

INTERNATIONAL® TRUCKS

"Standard of the Highway"



G. E. ANNOUNCES NEW MOTORS—General Electric has announced a new line of polyphase ac motors which they claim offer better protection, more efficiency, and result in quieter operation. Called the Tri-Clad "55," the new motors represent an average size reduction of 50% by volume and 22% less weight per hp. Even though size and weight have been materially reduced and new design concepts incorporated, the new series has high efficiency and will operate under greater full load speed conditions than the former motor, according to engineers. G.E. plans additional improvements and new motors shortly after the first of the year.—**General Electric Co. Schenectady 5, N. Y.**

ALL-STEEL SHORE—Feature of a new all-steel shore is rapid adjustment. Marketed under the name of Speedset, the new adjusting device is a collar with four lateral grooves graduated in 1-in. levels, enabling the shore to be set no more than 1 in. away from the desired height. Less than four turns of the screw handle are needed to fit the shore snugly in place. The Speedset was specifically designed for use with the Waco steel shore and is available in 6-, 11-, 8- and 13-, 10½- and 15½-ft sizes. Flat plate 8- and 14-in. J-heads are available for all different shoring applications.—**Waco Mfg. Co., 3565 Woodale Ave., Minneapolis 16, Minn.**

Digs 4 to 5 Jobs Every Day

Hattendorf-Bliss meet heavy daily schedules of scattered jobs—regardless of soil and weather conditions—because their Clevelands *dig* them *on time, every time.*

Each extension crew of Hattendorf-Bliss, Inc., Cleveland, Ohio contractors, *completes* 4 or 5 jobs every day—trench dug, pipe laid, trench filled, job cleaned up. The jobs average 250-300 feet each, for 4, 6 and 8 inch pipe and require 10-15 miles of traveling through big-city traffic.

Hattendorf-Bliss have standardized on Clevelands for over 20 years. Currently the firm is working 9 Cleveland trenchers and backfillers for many types of trench work. In one 10-hour day, a Hattendorf-Bliss crew with one Cleveland trencher completed 11,000 feet—over 2 miles—of trench 19" wide and 30" deep for a 4" pipeline, including the crossing of a 20' stream.

"We go with Clevelands," say Hattendorf-Bliss, "because we know from experience they'll do every job we schedule them for. They stand hard usage and they're fast. Their full-crawler mounting and low bearing pressure protect lawns and sidewalks—we practically never have a damage claim. And because they're compact and easy to transport, we can really cover the distance between jobs with safety at good speeds."

Get the Full Story on Clevelands from Your Local Distributor

THE CLEVELAND TRENCHER CO.
"Pioneer of the Modern Trencher"
20100 ST. CLAIR AVENUE • CLEVELAND 17, OHIO

UPSON-WALTON

tackle blocks

ENGINEERED FOR SAFETY
Extra large hoist-type hook, crosshead and links drop forged in accurate dies.
Forged steel shell plates, cast steel sheave. Rope cannot jam between shell and sheave.
Pressure lubricated bronze bearing. Easily accessible fitting recessed for protection.
Upson-Walton's unique, simplified, one-piece strap construction provides greater rigidity under hardest working conditions.
U-W

for EXTRA HEAVY work

ASK YOUR DISTRIBUTOR TO SHOW YOU ONE

THE Upson-Walton heavy duty trucking snatch block is ruggedly built for the jobs which are beyond the strength of the regular snatch block.

Size	Wire Rope Diameter	Working Load
6"	½"—⅝"	7 tons
8"	¾"—⅞"	9 tons

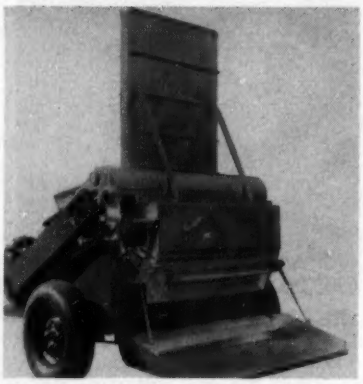
THE UPSON-WALTON COMPANY

12500 ELMWOOD AVENUE • CLEVELAND 11, OHIO

NEW YORK • CHICAGO • PITTSBURGH

MANUFACTURERS OF TACKLE BLOCKS, WIRE ROPE, ROPE FITTINGS—ESTABLISHED 1871

NEW GENERAL MODEL—Osgood-General has announced a new 1-yd dragline or 17-ton lifting crane. Known as the Model 327, it has such features as roller-bearing mounted hoist drums, roller-bearing mounted swing rollers, anti-friction bearings on superstructure main shafts, independent boom hoist with power up and power down, enclosed deck gears, machine cut gear teeth, and flame hardened gears where extra stress occurs. The machine is manually controlled. It has a 12 ft 10 in. long crawler with a standard width of 11 ft. Standard boom is 45 ft long, all welded, with heavy tubular lacing, available as flange or pin-connected. Boom inserts of variable lengths are available. Two types of fairlead are offered, either the standard swing type or the optional revolving type.—**Osgood-General, P. O. Box 515, Marion, Ohio**

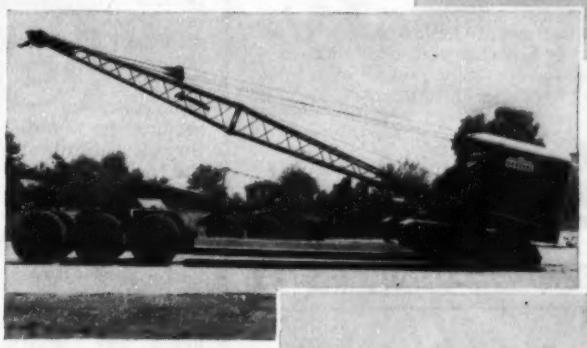


ASPHALT MIXER—Recently added to the line of portable asphalt mixers is this HTD-500 multi-pug asphalt mixer. It is claimed to be specially suited to hot or cold patching in any season under wet or dry conditions. It reactivates and heats stock-pile mixtures up to 15 tons per hr. It prepares cold asphaltic mixtures up to 30 tons per hr and hot asphaltic mixtures up to 10 tons per hr. It will also process tars, paving asphalts, cut-back asphalts, and emulsified asphalt. It is produced by **K. E. McConnaughay, Lafayette, Ind.**

There is no easier way to load a trailer...

than the TALBERT WAY

1 Removing the gooseneck to permit easy front end loading



2 No hard-to-handle ramps to place in position—simply "drive the crane on"

3 Replace the gooseneck, and move gooseneck into fifth wheel position

Shown here a Talbert Trailer Model T3D—60—RG-RA, owned by the BUCTON CONSTRUCTION CO., Hazen, Arkansas

60 Ton Capacity, drop side deck, removable gooseneck, removable third axles . . . with single axle jeep dolly.

Write for New Talbert Catalog No. 104

THE TALBERT CONSTRUCTION EQUIPMENT CO., of Lyons, Illinois manufactures a complete line of low-bed trailers and dump semi-trailers.

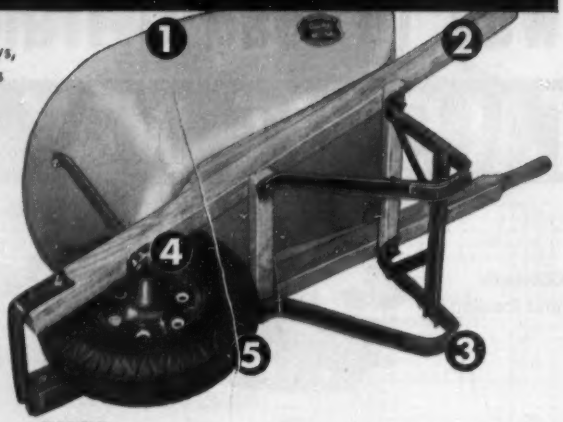
THE TALBERT-WAY IS THE EASY WAY

TALBERT CONSTRUCTION EQUIPMENT COMPANY
7952 W. 47th St., Lyons (Chicago Suburb) Ill.

Name.....
Firm Name.....
Address.....
City..... State.....

HERE ARE 5 GOOD REASONS WHY
BUCH #154 is the Contractor's Standard

1 Sturdy steel trays, reinforced edges
2 One-piece hardwood handles
3 Pre-formed runner type shoes
4 Cold Rolled Steel axle, perfect wheel alignment
5 Buch Master Welded Wheel. Plain, ball or roller bearings

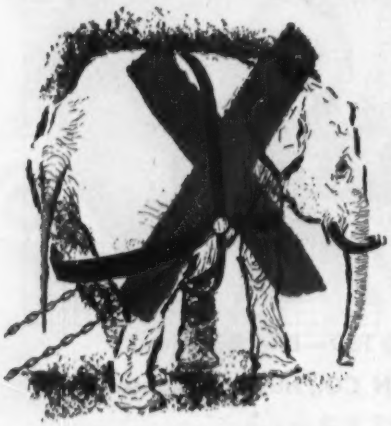


BUCH Contractor's Barrows are built to do a job . . . and they do it. The 154 offers large tray capacity, perfect balance for easier moving and BUCH's famous one-piece tray. Available with either hardwood handles or tubular steel handles. Send for leaflet on BUCH Contractor's Barrows.

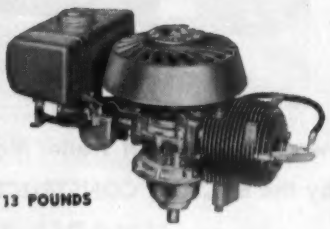
Carrying the load since 1868

Buch Better-Built Barrows for ALL INDUSTRIAL MOVING

BUCH MANUFACTURING COMPANY • ELIZABETHTOWN, PA.



be modern— go Lightweight



13 POUNDS

The POWER PRODUCTS Lightweight packs more power per pound

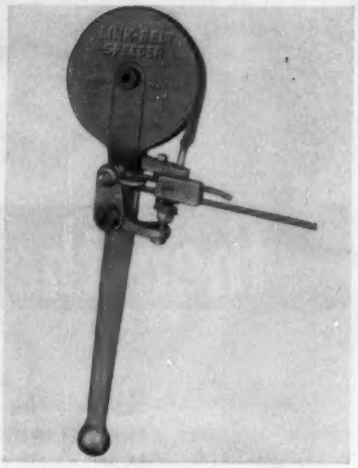
When it comes to lightweight power nothing can touch this engine. Not only is it amazingly lightweight, but it has every important quality feature to assure long, dependable performance

- LIGHTWEIGHT
- MINIMUM EFFORT STARTING
- LONG LIFE, LESS MAINTENANCE
- FULL CARBURETION
- BALL BEARING MAIN BEARINGS
- SEALED DRIP PROOF CRANKCASE
- FULLY ENCLOSED, FLY-BALL GOVERNOR
- NO OIL CHANGING OR CHECKING
- CLOG FREE COOLING SYSTEM

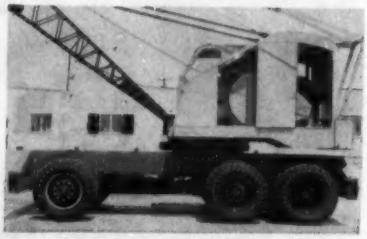
For portable equipment, you can't find a better engine for lightweight and dependability.

be modern - go Lightweight

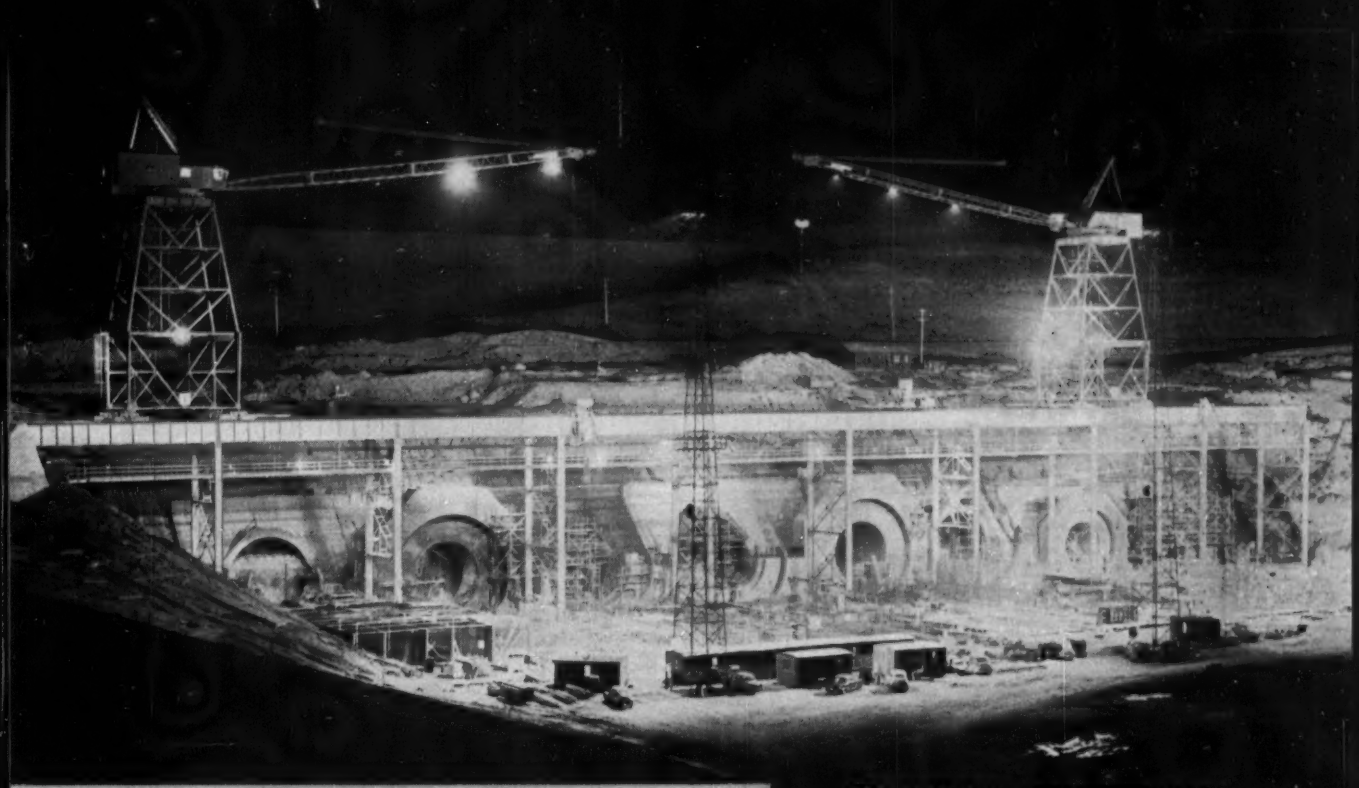
POWER PRODUCTS CORPORATION
GRAFTON, WISCONSIN



NEW THROTTLE CONTROL—Here is a new positive-action, friction-type throttle control designed to help improve the performance of gasoline- or diesel-powered equipment. It can be used on shovels and all other construction machinery, tractors, engines, crushers, and drilling rigs, according to the manufacturer. The throttle control, once it is set, holds the engine speed constant in spite of any vibrations which might be encountered. It is easily mounted in the field, and no adjustment is necessary to compensate for engine size or type. Moving parts on the new control are either aluminum- or cadmium-plated to resist rust. It will mount any place a governor cable can be attached. For details, request Folder 2476 from **Link-Belt Speeder Corp., Cedar Rapids, Iowa**



CRANES—Two new additions to the Thew Shovel Co. line are Model MC-254W with a lifting capacity of 17½ tons and Model MC-424 with a lifting capacity of 22½ tons. The Model MC-254W is a 3-axle Moto-Crane available as a ¾-yd shovel, crane, dragline, clamshell, hoe, or a 1¼-cu yd scoop shovel. It may be had with either diesel or gasoline power. The MC-424 model is a two-engine machine with a gasoline-powered turntable or superstructure mounted on a 3 axle carrier, and is powered by a separate gasoline engine which gives ten forward speeds and two reversible speeds. It is convertible to shovel, crane, clamshell, dragline or hoe booms.—**The Thew Shovel Co., Lorain, Ohio**



GARRISON DAM . . . working around the clock was the rule for men and machines to complete the huge Garrison project on schedule.

American 25 ton truck crane on the job at the Garrison Dam

American Hoist Builds America

Keeping work on schedule is a must on any construction job! Every machine must deliver the goods night and day, month after month, year after year.

American equipment used on the Garrison dam project worked with around-the-clock dependability. That's why more and more cost-conscious contractors are buying the cost-cutting American 375 to speed production, increase profits!

It'll pay you to find out about the American 375...crane, shovel, backhoe, clam or magnet crane. It invites comparison! Write or call your nearest distributor for complete details!

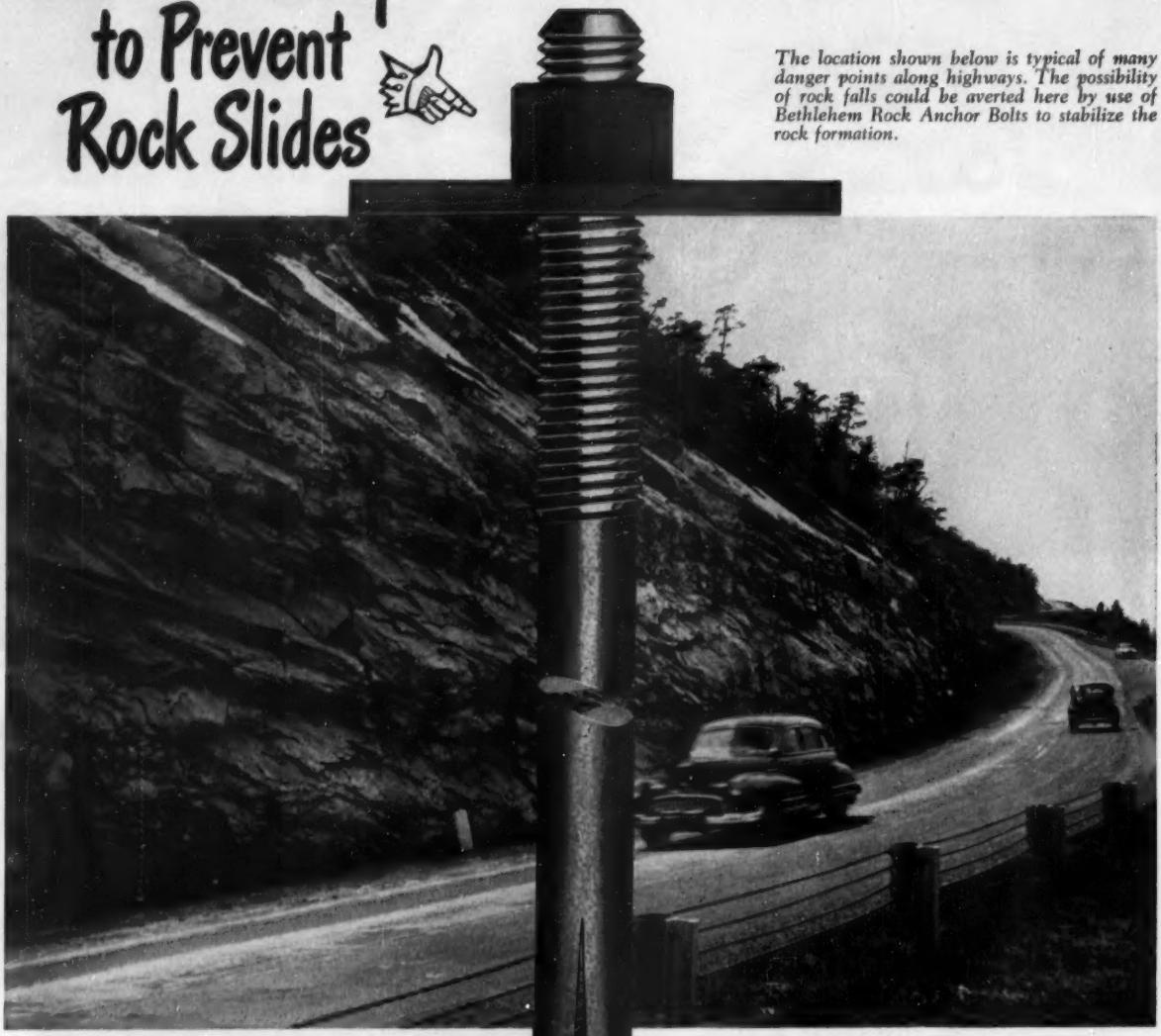
American Hoist
and DERRICK COMPANY
St. Paul 1 Minnesota

MANUFACTURERS OF:

Crawler and Truck Cranes · Derricks · Crosby Blocks · Sheaves · Locomotive Cranes · Hoists · Portable Material Elevators · Crosby Clips · Revolver Cranes · Roofers Hoist

Here's the Way to Prevent Rock Slides

The location shown below is typical of many danger points along highways. The possibility of rock falls could be averted here by use of Bethlehem Rock Anchor Bolts to stabilize the rock formation.



You know from experience the havoc and monetary loss which can be caused by rock slides along rights-of-way. But today many dangerous locations can be made free from such troubles by using Bethlehem Rock Anchor Bolts to stabilize the rock formation.

Bethlehem Rock Anchor Bolts anchor layers of rock or individual boulders to bedrock, preventing them from sliding or rolling. They are ideal for use in cuts with high banks, or on steep hillsides, and are highly effective where the formations which they anchor in turn support adjacent or overlying strata.

Bethlehem Rock Anchor Bolts are 29/32 in. in diameter, and come in lengths of from 2 ft to 10 ft. One end of the bolt has 5 in. of 1-in. rolled threads. The opposite end has a 6-in. slot, made by an exclusive forging process which forms the equivalent of two half-rounds. The slot accommodates a wedge, which is forced deep into the slot when the back of the hole is reached.

The bolts are furnished with an American Standard square nut. They can be installed horizontally or at an angle, and can be used in combination with rock anchor ties, plate washers, and angle washers.

Bethlehem Rock Anchor Bolts are worth looking into. Why not try them out on one of your most dangerous locations? We'll be glad to work out the details with you, whenever you say.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

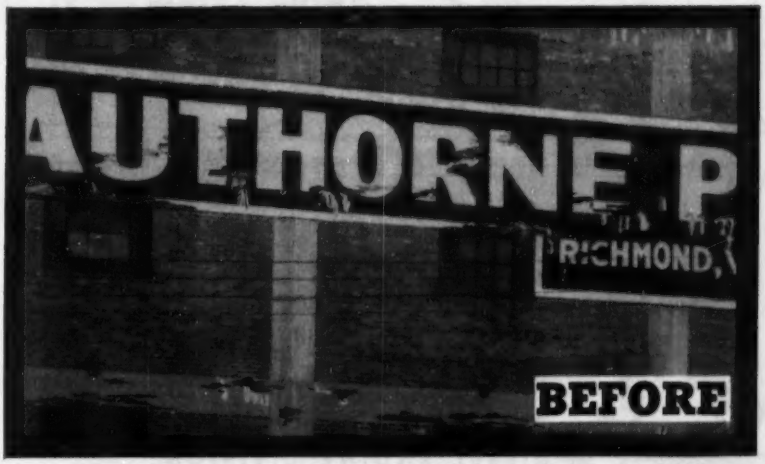
BETHLEHEM STEEL

BETHLEHEM ROCK ANCHOR BOLTS

QUICK AIR CONNECTION—A new, compact, quick detachable air connection, said to give almost complete free flow of air to air-powered tools is now being made available. According to the manufacturer, this new Q-D connection, which is recommended for air-hose coupling on paint spray guns and other air-operated equipment, slashes pressure drop at the connection to only 5%. The new connection will full swivel 360 deg. It has only two main elements, a male member that threads on to the air inlet of the spray gun or other tool, and a female member that attaches to the air hose and consists of a sleeve with a sliding collar. Additional information and prices are contained in Bulletin Q-D from the **Binks Mfg. Co., 3122 Carroll Ave., Chicago 12, Ill.**

HEAVY - DUTY OPEN - END WRENCHES — Snap-on Tools Corp. has announced a series of ten wrenches with detachable tubular handles in sizes ranging from ⅞ to 1½ in. The wrenches have been designed for heavy nut turning, especially on jobs where box-type wrenches cannot be used. All wrenches have a spring-mounted locking button which fits into a hole in the tubular handle to lock them securely together. This button must be depressed with a nail or similar object so they cannot be separated accidentally. The heads of these wrenches are set at a 15-deg angle to the handle so that the nuts can be turned with only a 30-deg handle movement when space is restricted. **—Snap-on Tools Corp, Kenosha, Wis.**

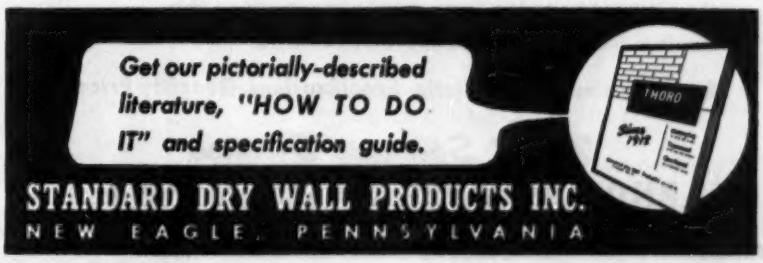
THORITE patching mortar and two THOROSEAL applications rejuvenated this Virginia building



Constant weather exposure over the years caused the masonry of this building to disintegrate. If this unsightly condition had not been corrected it would have finally imperiled the structure of the building.

All concrete spandrel beams, columns, window heads and brick sills were patched and brought flush with surrounding surface by the use of The THORO System product, THORITE, a twenty-minute set, nonshrink, patching mortar. Two brush coats of THOROSEAL were then applied over entire reinforced concrete surfaces, to prevent further disintegration, also to beautify building.

CONTRACTOR: **Southern Waterproofing and Concrete Company, Inc., 1704 Arlington Road, Richmond, Virginia.**


Get our pictorially-described literature, "HOW TO DO IT" and specification guide.
THORO
STANDARD DRY WALL PRODUCTS INC.
NEW EAGLE, PENNSYLVANIA

NOW SHOWING

"WHAT YOU SHOULD KNOW ABOUT DIESEL ENGINES"

NEW P&H COLOR SOUND FILM

It's an all-new sound-slide film . . . that provides clear, concise answers to "What you should know about Diesel engines." Give it a showing, and it will give you a better A to Z understanding of the diesel engine — how it operates; how it compares with gasoline engines; two versus four cycle diesels; why P&H Diesels perform better on tough jobs; how they save money on both operating and maintenance costs.

Plan a review of this educational and entertaining color sound-slide film. Ask your P&H dealer about it . . . or write us for details.

P&H

DIESEL ENGINE DIVISION

HARNISCHFEGER CORPORATION CRYSTAL LAKE, ILLINOIS

the P&H Line

STURDILITE

Rubber Mounted Base—Standard Model

HEAVY DUTY FLOOD LAMPS

For Better Light—Longer Service—Lower Cost

Especially Designed for Efficient Service on Shovels, Excavators, Drag-Lines, Roadbuilding Equipment — Locomotive Cranes, Tractors . . .

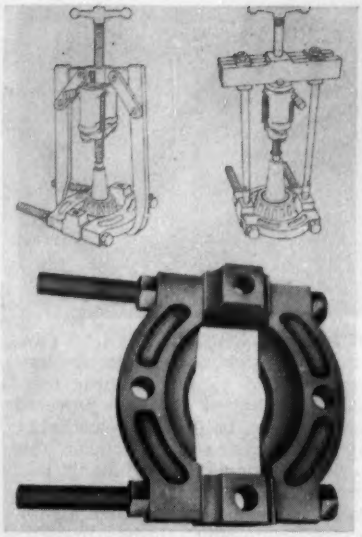
STURDILITE Heavy-Duty Flood Lamps provide specially high light intensity and spread, heavily constructed for years of service. Hermetically sealed-beam lamp no reflector to tarnish. Spring-mounted socket. Complete assembly mounted on rubber cushioned base to absorb vibration and shocks. Available in 6-8, 12-16, 24-28 and 110-120 voltages.

Send for Illustrated Bulletin, Specifications, Quantity Prices

Metal Spinning Division

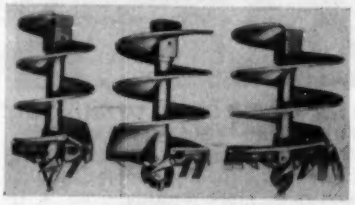
PHOENIX PRODUCTS COMPANY

4729 N. 27TH STREET, MILWAUKEE 16, WISCONSIN



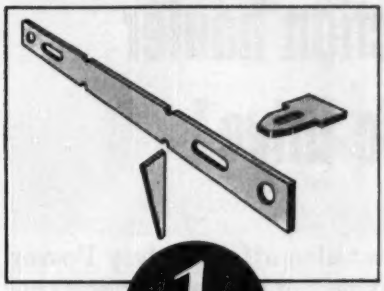
NEW PULLING ATTACHMENTS—Two new large-size pulling attachments for use with standard pullers are now available. For use with a 50-ton power twin hydraulic ram in connection with either Grip-o-matic pullers or push-pullers, these attachments assist in the removal and installation of large bearings, gears, pulleys, sheaves, wheels, couplings, etc., on all types of machinery. One size has a capacity from 5¾ to 13 in.; the largest size from 6¾ to 16 in. Additional information may be obtained from the **Owatonna Tool Co., 380 N. Cedar St., Owatonna, Minn.**

NEW PLIERS—Six new PROTO pliers, a compound leverage type, a multiple-groove joint type, a diagonal, and three needle nose styles, have just been announced. Descriptive material can be obtained from the **Plomb Tool Co, Los Angeles, Calif.**

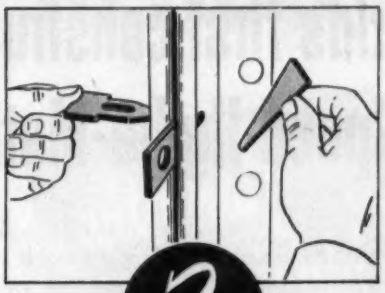


FLIGHT AUGERS—This heavy-duty flight-type auger is available in sizes from 16- to 36-in. dia. It has been designed for large jobs and for gravel or loose material, and is claimed to complete the hole in less time, due to its added carrying capacity of additional flights. Called the Pengo Flight Auger, it comes in 26-in. lengths for use on all makes of boring machines, and also 34 in. in length for use on machines mounted sufficiently high to accommodate these long flights. Literature and prices may be obtained from **Petersen Engineering Co., Santa Clara, Calif.**

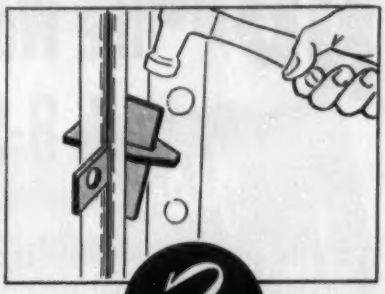
Three pieces comprise the unit.



Slip panel into position with **FLAT BAR TIE** between panels. Put **KEY WEDGE** thru frames and slot in **BAR TIE.**



Stick **WEDGE** in slot in key wedge. Drive fast with hammer.



...and your form is set!

A SIMPLE UNIT OF 3 PIECES

QUICK AND EASY ASSEMBLY

A LIGHTWEIGHT FORM PANEL

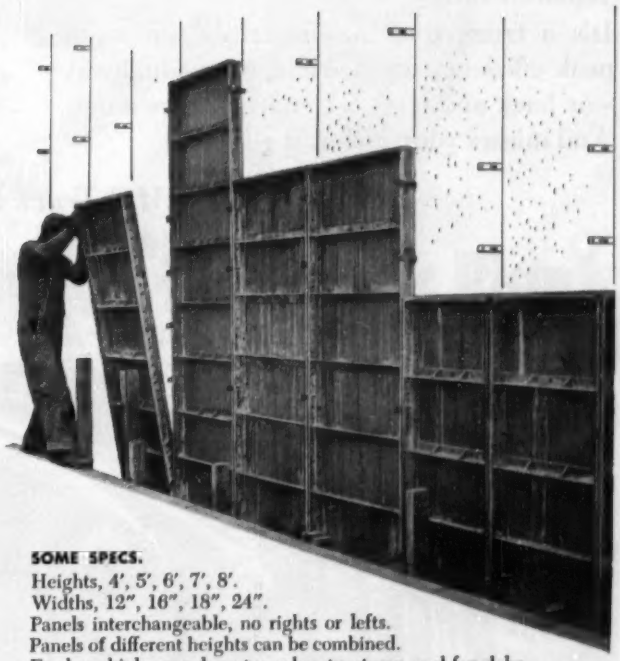
ATLAS COMPO FORMS go up faster, strip easier. Contractors and builders save on form costs and form labor with every use. Panels slip into place without disturbing adjoining panels. No sidewise juggling needed to erect or strip. Start at any or many points.

A pleasure to handle, the largest panel weighs but 75 lbs. But it's TOUGH! Pressed steel channels of our own weight-saving design, frame and reinforce plastic-faced plywood. The plastic plywood faces have been re-used 40 times before reversing. And split rivets make reversing or replacement easy.

No walers needed, no wooden wedges, no nail-driving. One row of a pair of 2 x 4's takes care of maintaining alignment under pressure. Liners go up in a jiffy, thanks to our exclusive liner clamp which hooks on to bar tie.

Right now we're printing a CONCRETE CHECKER—"what to check before you pour." Use the coupon to get this handy wall card and more information.

IRVINGTON FORM & TANK CORPORATION
20 Vesey Street, New York, N. Y.
Atlas Compo Form Division



SOME SPECS.
Heights, 4', 5', 6', 7', 8'.
Widths, 12", 16", 18", 24".
Panels interchangeable, no rights or lefts.
Panels of different heights can be combined.
For low, high, round, rectangular structures, and for slabs.
Pilasters, inserts, easily accommodated.
Inside and outside corners, steel fillers and special shapes available from stock.

Irvington Form & Tank Corp.
20 Vesey St., N. Y. C. Dept.. Q2

Please send ☐ Folder on Atlas Compo Forms.
☐ Concrete Checker Card. ☐ Man to see me.

NAME_____

FIRM_____

ADDRESS_____

NOW the World's first construction hauler with 8-Speed Hydra-Matic Drive!

It's been THE dream for years. Now GMC's sensational new M470 makes it reality—*a truck that conquers the truck-killing strains of construction hauling with 8-speed Truck Hydra-Matic.*

It's a truck that shifts *itself* to hustle top loads up the toughest grades—with the least engine effort. Its axle and drive line can't be shock-loaded. It never needs clutch repairs or replacement.

It's a truck that *automatically* maintains peak efficiency on the road, off-the-highway—or back and forth a hundred times a day. And misers your fuel as it goes.

It's a truck that also offers Safety Power Steering* to wipe out 75% of the steering effort. And—with truck-control so much easier—drivers stay more alert—safety records improve.

What's more, the M470 teams all this with a power plant that's—pound-for-pound—the mightiest in gas truck history. Famed GMC ruggedness is greater than ever.

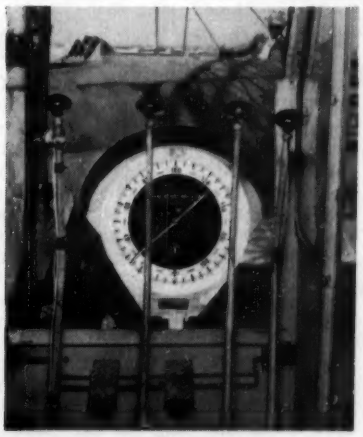
And price? You'll be amazed at how little it costs to put this new Hydra-Matic sensation on *your* profit-making team. See your GMC dealer—and see for yourself! *Optional at extra cost

Get a modern truck!

GMC Truck & Coach Division of General Motors

Illustrated is GMC's 145 H.P. M470—22,000 GVW

HOPPER CONVEYOR—This is a new hopper conveyor for filling trenches, curbing, ditches, pipelines, etc., on construction jobs. Called the Power-Pack Conveyor, Model 600, it is powered by a gasoline engine which drives the 14-in. wide conveyor belt. Controls are on the operator's platform for easy adjustment of belt speed, amounts of material being fed, etc. The maximum capacity is 3 tons per min and the maximum belt speed is 500 fpm. The conveyor is towed by a truck and will handle practically any fill material from sand, cinders and crushed stone to heavy clay. The conveyor is removable so that the hopper can be used as a spreader and a separate handling unit. Weight of the Power-Pack Conveyor is 2,100 lb.—**Power-Pack Conveyor Co., 13910 Aspinwall Ave., Cleveland 10, Ohio**



WEIGHT AND RADIUS INDICATOR—Here is an indicator that should prove very helpful to crane operators. It's the Martin-Decker Crane Weight and Radius Capacity Indicator. It will show the operator at a glance the exact boom radius at which he is operating; the safe capacity of his crane at that radius; and the exact weight he is lifting in pounds, thus eliminating the guesswork from crane operation and assuring safe, fast, and accurate performance. The scale reads direct in pounds on a 12-in. dial and is easy to install. It is said to be extremely dependable. Additional information can be obtained from the **Martin-Decker Corp., Long Beach, Calif.**

10,000 WATTS A.C.

with half the weight!

in half the space!

MODEL 10CW
10,000 watts A.C.
Gasoline powered

the New ONAN "10 CW" Electric Plant

Check these advantages!

- ★ High capacity for big jobs.
- ★ Twin-cylinder, horizontally-opposed, air-cooled, alternate-firing engine.
- ★ Aluminum-alloy cylinder heads.
- ★ Extra-large, replaceable bearings.
- ★ Full-pressure lubrication, 6-quart oil capacity, oil filter.
- ★ Impulse-coupled, high-tension magneto ignition; radio suppressed.
- ★ Quiet, vacuum air cooling of generator and engine.
- ★ Excellent accessibility; snap-off housings.
- ★ Extremely quiet running.
- ★ High performance generators.
- ★ Completely equipped with controls and instruments.

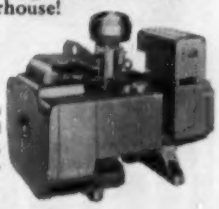
Costs less than any other complete electric plant!

You can't match it anywhere in performance, equipment or value. The sensational new Onan *10CW* gives you everything you've wanted in an electric plant plus exceptional mobility for a unit of its capacity.

On large construction jobs, where wattage requirements for power tools are high, or where floodlighting of extensive work areas is essential, the Onan *10CW* delivers all the electric power you need.

Before you buy another electric plant for any purpose, take a good look at this new low-cost powerhouse!

Model 5CW
5,000 watts
Same advanced design as the 10CW with all its exclusive advantages. Built for heavy duty, economical operation.



Write for Detailed Specifications!

Onan ELECTRIC PLANTS

D. W. ONAN & SONS INC.

7855 University S.E., Minneapolis 14, Minnesota

CROWD! HOIST! SWING!

Crowd, hoist, swing—*crowd*, hoist, swing—millions of times a day on jobs in construction, mining, and materials handling, rugged shovels slam the horsepower of powerful engines through hard-working clutches. Jobs like this call for tough, precision clutches, built to withstand loads *beyond* rated capacities. That's why more shovel builders and buyers *standardize* on Twin Disc "E" and "EH" Heavy Duty Clutches—with wider, better-finished surfaces; heavier, more compact construction.

Whether you're building shovels or other equipment . . . or using them . . . you'll profit by specifying Twin Disc Friction or Hydraulic Drives . . . developed from 35 years of specialized experience, backed by 8 Twin Disc Factory Branches and 60 Twin Disc Parts Stations.

Lima-Hamilton Division, of Baldwin-Lima-Hamilton Corp., incorporates Twin Disc Clutches in many products, including Heavy Duty Model "E" Clutches in its Paymaster Shovels. Write for Bulletin 108-F.

TWIN DISC

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois

BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TULSA

New PUBLICATIONS From MANUFACTURERS

The catalogs and bulletins reviewed below will keep you posted on latest developments in construction equipment and materials available for your use.

TAMPING ROLLERS—Advantages of a new type of cleaner teeth on giant Bros "diamondfoot" tamping rollers are explained in a new 4-p folder. Schematic drawings and photos illustrate how other design improvements help qualify Bros sheepsfoot and diamond foot tamping equipment for a wide variety of job specifications and conditions. For a copy, write to the **Road Machinery Div., Wm. Bros Boiler & Mfg. Co., Minneapolis 14, Minn.**

UNIVERSAL JOINTS—Covering the applications, engineering data, models and sizes, proper joint selection, etc., of Universal joints, a new 12-p illustrated catalog has just been made available. Constant velocity, the principle on which the joints are designed, is described and illustrated. This type of joint design, according to the manufacturer, provides maximum uniform flow of power, capacity, and length of life. This catalog may be obtained by writing direct to the **Gear Grinding Machine Co., 3901 Christopher, Detroit 11, Mich.**

HOW TO LUBRICATE ELECTRIC MOTORS—Comparisons of methods for lubricating electric motors are described in a new bulletin just released by U. S. Electrical Motors, Inc. The literature illustrates the three principal types of bearings used in motors—cartridge, standard open, and Lubriflush types—with explanations of the functions of each. A series of natural color photos is reproduced demonstrating the action of re-lubrication in the U. S. Lubriflush bearings. For a copy of this new bulletin featuring Lubriflush, write to **U. S. Electrical Motors, Inc., Box 2058, Los Angeles 54, Calif.**

STORING, RECLAIMING, AND EXCAVATING—Long-range materials-handling machines are described in detail in a 4-p bulletin just released by Sauerman Bros., Inc. Line drawings are used to explain how the drag scraper, slackline cableway and tautline cableway operate. Copies of this bulletin may be obtained by writing to **Sauerman Bros., Inc., Dept. C-30, 522 S. Clinton St., Chicago, Ill.**

TRAILERS—A 4-p bulletin describing trailers that are identified with big operations has just been released by **Rogers Brothers Corp., Albion, Pa.**

ENGINEERING SIDELIGHTS OF SHASTA DAM:

The clean, simple lines of this concrete gravity dam, towering 602 feet above the bed rock of the Sacramento River Canyon, give no hint of the mammouth engineering feats that had to be accomplished before the dam was constructed. Prior to erection of Shasta, builders had to relocate 37 miles of mainline railroad, 21 miles of main highway . . . drive 12 new railroad tunnels through the mountains and erect 8 bridges. Next they installed a complex system of overhead cableways that covered the entire dam and power plant areas. Suspended from these cables were 8-cubic-yard buckets used to carry concrete to far-flung job sites. Following this overwhelming preconstruction activity, erection of the dam itself seemed relatively easy even though enough concrete was poured to lay a three-foot walkway completely around the world at the equator. In this instance, pre-planning was largely responsible for the successful construction of the project.

A Traylor TC Gyratory Represents Half-A-Century of Engineering Planning to Solve Your Production Problems

In countless countries around the world you'll find producers depending on Traylor's curved crushing surfaces and non-chokable bell head features to assure steady output and boost production records. That's because the curved crushing surfaces in a Traylor TC Gyratory apply power as a direct crushing force to reduce lifting and churning . . . packing and choking. These are only two of many Traylor Engineering achievements which help you produce a more uniform cubical aggregate at less cost. Free Bulletin 7112 gives a complete outline and description of all Traylor features. Send for your free copy today.

Built in seven sizes with feed openings from 20" x 80" to 60" x 210".

TRAYLOR ENGINEERING & MFG. CO.
617 MILL ST., ALLENTOWN, PA.
SALES OFFICES: New York • Chicago • San Francisco
CANADIAN MFRS: Canadian Vickers, Ltd., Montreal, P. Q.

Traylor

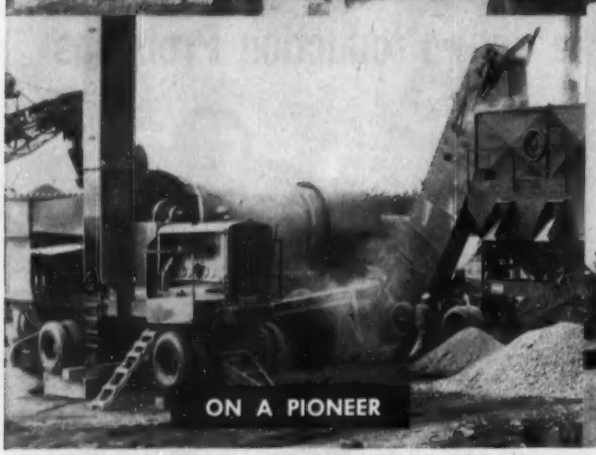
Primary Gyratory Crushers | Rotary Kilns | Secondary Gyratory Crushers | Ball Mills | Jaw Crushers | Apron Feeders

ON A HETHERINGTON & BERNER

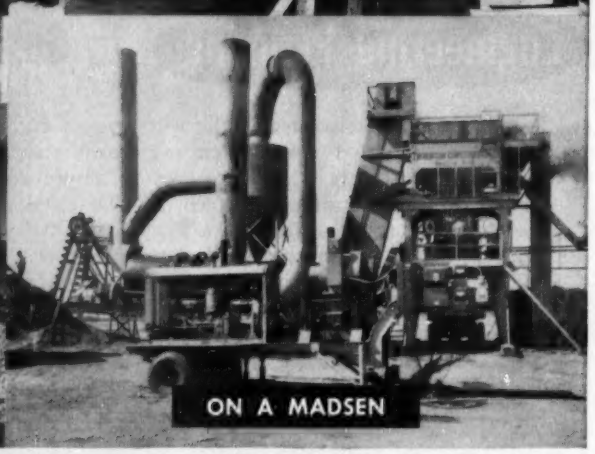
CUT "Cost Corners" IN YOUR ASPHALT PLANT WITH MURPHY DIESEL POWER

ON A BARBER-GREENE

ON A CEDARAPIDS



ON A PIONEER



ON A MADSEN

MURPHY DIESEL COMPANY • 5339 W. Burnham St., Milwaukee 14, Wisconsin

Engines and power units 90 to 240 H. P. Generator sets 60 to 140 K. W. Also Mech-Elec Units for supplying both mechanical and electrical power simultaneously or separately.

MURPHY DIESEL

273

Heavy duty power **for construction**

Murphy Diesel Engines and power units are available in sizes from 90 to 240 H.P. Engine speeds are 1200 and 1400 rpm. Also available are dual-fuel engines and altitude engines which will maintain sea level ratings up to 9000 ft. "Packaged" generating units are available with capacities ranging from 60 to 140 K.W. A.C. or D.C. voltages to suit your requirements.

CAISSONS—A new 12-p brochure describing Franki displacement caissons (or pressure-injected spread footings) tells the complete story of the methods, results, tests, requirements for design and firm, fixed-price quotation policy. The process and the job illustrations are well presented and arranged in interesting sequence. Copies of this booklet are free and may be obtained from the **Franki Foundation Co., 114 E. 40th St., New York 16, N. Y.**

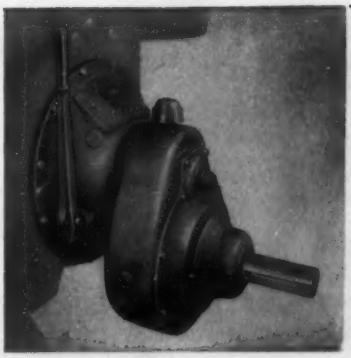
WIRE ROPE—A new brochure entitled "What's The Difference in Wire Rope?" answers questions which may be in the minds of wire-rope buyers. It explains differences in the selection of wire going into various rope, and differences in manufacturing process. — **Leschen Wire Rope Div., H. K. Porter Co., Inc., St. Louis 12, Mo.**

CATERPILLAR SERVICE — "The Story of Modern Service," the latest booklet being distributed by Caterpillar Tractor Co., discusses the various service methods used by Caterpillar dealers both in the shop and in the field. It includes a map showing the location of all Caterpillar dealers, parts, depots and factories. Ask for Form D381. Copies may be obtained from any Caterpillar dealer or **Caterpillar Tractor Co., Peoria, Ill.**

RUST PREVENTIVE—A new 1954 General Catalog dedicated to showing industry how to stop rust has been released by Rust-Oleum Corp. The material features 94 color chips of Rust-Oleum products and includes complete instructions for surface preparation and application of primers, short-oil type, long-oil type, machinery and implement finishes, chemical- and heat-resistant types, sealers, oil field finishes, thinning oils and floor and masonry coatings. Copies of this booklet are free and may be requested from the **Rust-Oleum Corp., 2799 Oakton St., Evanston, Ill.**

TWO-WAY RADIO COMMUNICATION—RCA has just produced two 4-p folders describing the latest in mobile equipment. When writing for this material, ask for Catalog C .3011 and Catalog C .30—**Radio Corp. of America, Communications Equipment, Camden, N. J.**

TRANSITE DUCTS—A 12-p booklet describing Transite ducts and installation and maintenance information is well illustrated and cites typical examples from public utilities, telephone companies, and other industries which show how this type of material can cut cable subway costs. Copies are available from **Johns-Manville, 22 E. 40th St., New York 16, N. Y.**



FUNK
GEAR REDUCTION POWER TAKE-OFFS
FOR INDUSTRY AND AGRICULTURE

with the exclusive Straddle Mounted Pinion . . .

FUNK PRODUCTS INCLUDE:

Right-Angle Take-Offs.

Front End Take-Offs.

Jack Shaft Extensions.

Ford Tractor Conversion Kit adapts 6 or V-8 engine, doubles power. (See picture below.)

Here is a new NAA Golden Jubilee Ford Tractor converted with Funk NC Kit, other kits for any Ford Tractor.

This exclusive Funk development assures complete gear tooth contact at all times by providing a pinion with a taper roller bearing support at each end driven by an input shaft with a lubricated floating spline, eliminating misalignment from improper installation or load deflection . . . some of the many reasons why you can expect longer, trouble-free service from FUNK Gear Reductions. Fit all SAE flywheel housings. Special ratios or special adaptions of standard units supplied on small orders. For keeping old equipment on the job economically, write for catalog and prices of Funk Power Take-Offs and Gear Reductions.

FUNK AIRCRAFT CO.

3303 Airport Drive, Coffeyville, Kan.

Powered by a two-drum hoist mounted on a tractor stationed on a highway rise, this Sauerman Crescent Scraper is doing a "first-rate" job of cleaning a drainage channel.

For similar operations, such as cleaning under culverts, removing silt from storm sewers or working in places where headroom is too limited for other machines, the Crescent-tractor combination gives you the same versatile efficiency at low investment cost.

The Crescent, working between an anchorage and the hoist, will deposit excavated material anywhere along the span simply by reversing the forward pull. Through an opening no larger than its own width, the Crescent can be started through an underpass. It digs equally well on firm ground, boggy material or under water.

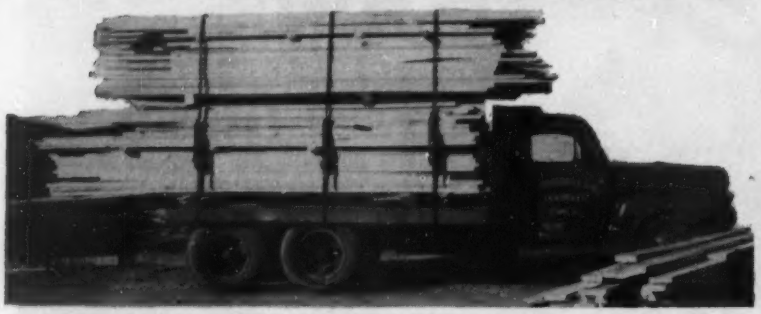
Write for Field Report 209 describing the use of Crescent Scraper with tractors. This illustrated report tells how to use a scraper with your tractor and gives cost figures on representative jobs. For similar information on use of Crescent Scrapers with boom machines, request Field Report 219 and Catalog J.

SAUERMAN BROS., INC.

580 S. Clinton St., Chicago 7, Ill.

SAUERMAN BROS., Inc.

There's never been anything like



LAUGHLIN'S Load Binder

BRAND NEW
new design, new economy, new convenience.

MORE USEFUL
one binder does the work of two.

GREATER SAFETY
drop forged strength plus non-slip locking.

HERE'S THE STORY:

The new LAUGHLIN LOADBINDER is a sturdy, drop forged, heat treated steel unit available in two sizes, each of which can use four different hook sizes. You buy only one handle assembly, attach two Laughlin clevis grab hooks to fit your chain. Change hooks in a jiffy with pliers or screwdriver.

Stronger, too, because swivel tongue swings on end of slotted jaw, won't spread under strain. Safe, because a positive cam lock action keeps it shut.

#1 Binder: U.T.S. 22,000 Lbs. Hook sizes: ¼", 5/16", 3/8", 7/16" | #2 Binder: U.T.S. 32,000 Lbs. Hook sizes: 3/8", 7/16", ½", 5/8"

Laughlin Clevis Grab Hooks are stocked by leading Industrial Supply, Wholesale Hardware, Oil Field, and other Distributors. Ask your distributor for information about the new loadbinder, or write for 4-page folder. It has complete description, specifications and users' comments.

For a complete listing of 1500 types and sizes of Laughlin wire rope and chain fittings, ask also for our Catalog 155.

THE THOMAS LAUGHLIN COMPANY
214 Fore Street, Portland, Maine

STABILIZATION MANUAL—"Calcium Chloride for Stabilization of Bases and Wearing Courses," a manual written to assist highway engineers, contractors, and materials suppliers when they use calcium chloride in the construction of dense graded bases and wearing courses, deals with properties and design, types and methods of construction, and specifications. The principles and recommendations presented are the result of many years of field application and laboratory research on the subject. Copies are free and can be had from **Calcium Chloride Inst., 909 Ring Bldg., Washington 6, D. C.**

NEW MOVIE—A 16-mm sound color movie featuring the Hyster "Hystaway" excavator-crane attachment for Caterpillar tractors is now available. The movie shows the quick changes possible from shovel to backhoe, clamshell, crane, pile driver and bulldozer. Make your arrangements to have this movie shown or borrow the film from any Caterpillar dealer or direct from the company. **—Hyster Co., 2902 N.E. Clackamas St., Portland 8, Ore.**

BETTER BLASTING—A 4-p illustrated bulletin designed to assist mine and quarry operators, construction engineers, pipeline companies, etc., on the use of industrial explosives gives the latest techniques on modern blasting in a practical, easy-to-read style. Get your copy from **Technical Div., Atlas Powder Co., Wilmington 99, Del.**

PORTABLE HOIST—Here's an 8-p catalog containing illustrations, descriptions and specifications for more than 100 different types and sizes of portable hoists. Among the units described are Coffing ratchet lever hoists, both roller and coil-chain models, with capacities from ¾ to 15 tons. The catalog can be obtained from **Coffing Hoist Co., 800 Walter St., Danville, Ill.**

JACKBITS—A complete range of Carset jackbits that are used with most of the popular threaded connections is described in a new bulletin which also contains a selection guide for choosing the right bit for each connection and application. Ask for Form 4146 from **Ingersoll-Rand, 11 Broadway, New York, N. Y.**

TIPS ON AIRPORT AND HIGHWAY CONSTRUCTION—This 20-p booklet describes the latest methods and equipment used in the construction of concrete airports and highways. It deals primarily with automatic batchers and batching plants, heavy-duty steel forms, fast portable finishing machines, automatic dual and tie-bar installation, high-speed joint installation, automatic membrane curing, subgrade planning and testing. Write the **Heltzel Steel Form and Iron Co., Warren, Ohio.**

General view of project during paving operations. One section of new interchange crosses bridge (upper right) and proceeds along embankment in background.

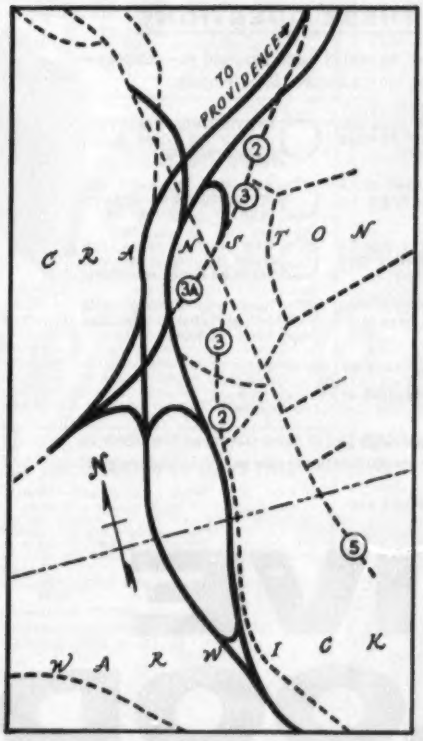
Jack Ramos (second from left), general superintendent for M. A. Gammino Construction Co., with (left to right) Sidney M. Budlong, Albert Capaldi and Carl Parker, state highway inspectors.

New Interchange Makes Things Easier for Bewildered Motorists

Until recently, the Cranston-Warwick area of Rhode Island, southwest of Providence, was no place for the timid motorist, or the bewildered stranger. For in that locality Routes 2, 3, 3A and 5 converged, the result often being a horn-tooting, temper-fraying bottleneck.

The aggravating condition has now been eliminated by the construction of the Meshanticut Interchange, a 1.48-mile double-barreled ribbon of concrete planned by the Rhode Island Dept. of Public Works, Division of Roads & Bridges. The newly opened highway, complete with sweeping turns, connecting lanes, bridges, culverts and service roads, keeps cars on the move, and cuts minutes from any trip through the area.

M. A. Gammino Construction Co., Providence, were the contractors for this important highway-improvement project. The engineers were Charles A. Maguire & Associates, also of Providence. Bethlehem furnished dowel units, fabricated steel and reinforcing bars.



Heavy lines show sweep of Meshanticut Interchange, in Cranston and Warwick, R. I. The new road eliminates congestion near where Routes 2, 3, 3A and 5 converge.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM STEEL

PRODUCTS FOR HIGHWAYS INCLUDE

Dowel Units • Reinforcing Bars • Guard Rail
Guard Rail Posts • Spikes • Wire Rope and Strand
Hollow Drill Steel • Bolts and Nuts • Tie-Rods
Timber Bridge Hardware • Pipe • Sheet- and H-Piling

BETHLEHEM STEEL

Communist machine-gun fire dropped him in combat. But whole blood kept him alive, saw him through the hospital. He thanks you for his life.

She'd been exposed to polio. A new serum, *Gamma Globulin*, made from blood, helped ward off the dread disease. She thanks you for her life.

A tornado whipped suddenly across her home town. She was badly injured by falling debris. But a quick operation, several transfusions pulled her through. She thanks you for her life.

Three grateful people say: "we're HERE... because you were THERE!"

Each one of these people is alive today because someone gave blood.

If you've given blood before, you know how easy it is—how quick and painless. And you know what a wonderful feeling it is when you realize that what you've done may give another person his life.

Now you are asked to give blood . . . again and again. And you can do it safely every 3 months.

Because America's need for blood has increased enormously—for our armed forces, for accident and disaster victims at home, for new disease-fighting serums.

Many a life hangs in the balance! Will you help? Call your Red Cross, Armed Forces or Community Blood Donor Center today!

BUSINESS EXECUTIVES CHECK THESE QUESTIONS

If you can answer "yes" to most of them, you—and your company—are doing a needed job for the National Blood Program.

- ◯ HAVE YOU GIVEN YOUR EMPLOYEES TIME OFF TO MAKE BLOOD DONATIONS?
- ◯ HAS YOUR MANAGEMENT ENDORSED THE LOCAL BLOOD DONOR PROGRAM?
- ◯ HAS YOUR COMPANY GIVEN ANY RECOGNITION TO DONORS?
- ◯ HAVE YOU INFORMED EMPLOYEES OF YOUR COMPANY'S PLAN OF CO-OPERATION?
- ◯ DO YOU HAVE A BLOOD DONOR HONOR ROLL IN YOUR COMPANY?
- ◯ WAS THIS INFORMATION GIVEN THROUGH PLANT BULLETIN OR HOUSE MAGAZINE?
- ◯ HAVE YOU ARRANGED TO HAVE A BLOODMOBILE MAKE REGULAR VISITS?
- ◯ HAVE YOU CONDUCTED A DONOR PLEDGE CAMPAIGN IN YOUR COMPANY?
- ◯ HAVE YOU SET UP A LIST OF VOLUNTEERS SO THAT EFFICIENT PLANS CAN BE MADE FOR SCHEDULING DONORS?

Remember, as long as a **single** pint of blood may mean the difference between life and death for **any** American . . the need for blood is **urgent!**

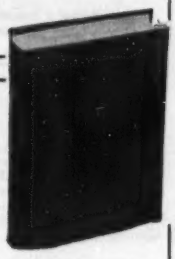
NATIONAL BLOOD PROGRAM

GIVE BLOOD

...give it again and again

PRESTRESSED CONCRETE STRUCTURES

A wealth of design data on prestressed concrete — with pointers on when and where to use it. Discusses steel and concrete, their types, and behavior when combined into prestressed members. Shows every step in prestressed concrete design —the problem itself, reckoning dead and live load, working all equations. Many detailed examples show how prestressed concrete was used in actual structures. **By August E. Komendant, Consulting Engineer. 261 pp., 153 illus., $6.00**

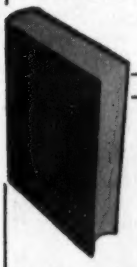


PILE FOUNDATIONS

Provides the information required for the design, driving, and maintenance of pile foundations. Covers the relations between borings, soil mechanics, and pile foundations; the most effective methods for determining pile capacities from driving resistances and friction values; the selection of rigs; the factors affecting choice of pile type, etc. One chapter supplies over 50 actual cases of pile foundation failures, with causes, methods of prevention, and remedies. **By Robert D. Chellis, Structural Eng'r., Stone & Webster Corp. 640 pp., 254 illus., $14.00**

NOMOGRAPHIC CHARTS

A collection of 92 timesaving charts for simplifying and speeding up engineering computations. The charts apply to mathematics and general engineering, the fields of hydraulics, mechanics, and thermodynamics, and electrical problems. They are accurate in the range between slide-rule computations and exact numerical computations, and each is followed by explanatory text. **By C. Albert Kulmann. 244 pp., $7.00**



HANDBOOK OF RIGGING

Condensed into this one book are all the tips, methods and techniques essential to more effective practices in industrial and construction operations. Deals with everyday maintenance operations—with the transportation and handling of heavy machinery—with the erection and demolition of smaller size structures. Covers everything from ropes, hoisting chains and hooks, to slings and ladders. **By W. E. Rossnagel, Safety Eng'r. 321 pp., over 300 illus., $6.00.**

SEE THESE BOOKS 10 DAYS FREE

McGraw-Hill Book Co., Inc., 330 W. 42 St., NYC 36
Send me book(s) checked below for 10 days' examination on approval. In 10 days I will remit for book(s) I keep plus few cents for delivery, and return unwanted book(s) postpaid. (We pay for delivery if you remit with coupon; same return privilege.)

- ☐ Komendant—**Prestressed Concrete Structures**—$6.00
- ☐ Chellis—**Pile Foundations**—$14.00
- ☐ Kulmann—**Nomographic Charts**—$7.00
- ☐ Rossnagel—**Hdbk. of Rigging**—$6.00

(Print)
Name .....
Address .....
City ..... Zone ..... State .....
Company .....
Position CM-2
This offer applies to U. S. only

BIG JOBS OF MONTH ...

Continued from page 28

Del Balso Construction Co., 500 Zerega Ave., New York City, New York State Thruway, Nyack Approach to Tappan Zee Bridge, access, ramps, secondary cross-roads including relocation of railroad tracks, 4.46 mi access roads, 1.57 mi Thruway, for Bureau of Contracts & Accounts, State Highway Dept., Governor Alfred E. Smith State Office Bldg., Albany, $7,162,-902.

Bryant & Detwiler Co., 2304 Penobscot Bldg., Detroit, Mich., 4-story concrete steel chemical building, Northeast station, 11000 E. 8-Mile road, Detroit, for City Board of Water Commissioners, 735 Randolph St., Detroit, $1,930,600.

Arthur H. Neumann & Bros., Inc., 514 Hubbell Bldg., Des Moines, Iowa, foundation for head house and car dumper for 5-million-bushel terminal grain elevator at Avon Lake near Des Moines for the Farmers Grain Dealers Association 1101 Walnut St., Des Moines, $3,-500,000.

Connolly, Pacific Co., 1925 Mater St., Long Beach, Calif. Building two jetties and raising two jetties at Long Beach for the City, City Hall, Long Beach, Calif., $1,769,-349.

Tellepsen Construction Co., Box 2536, Houston, Tex., sewage treatment plant, Beaumont, Tex. for the City, City Hall, Beaumont, Tex., $2,405,000.

Missouri Valley Constructors and **Winston Bros.,** 1932 Harrison St., Amarillo, Tex., Hales X power plant addition, Unit 3, Amherst, Tex. for Southwestern Public Service Co., 3rd & Polk Sts., Amarillo, $12,000,000.

Mellon Stuart Co., 210 E. Park Way, N.S., Pittsburgh, Pa., 1- and 2-story 250x250-ft brick, concrete, steel distribution and warehouse, Pittsburgh, Pa., for Western Electric Co., 195 Broadway, New York, N. Y. $2,000,000.

J. F. White Construction Co., 201 Alewife Brook Parkway, Cambridge, Mass. Amvets Memorial highway and bridge between Brockton and West Bridgewater for Commonwealth of Massachusetts, Department of Public Works, 100 Nashua St., Boston, $3,822,419.

It's a pretty long time when you apply it to the use of a Welding Torch. It means thousands and thousands of hours of use. Have you heard about the *Lifelong Guarantee* of Smith's Welding Equipment? Want to know more about it and what that kind of service can mean to you?

Drop us a card right away.

SMITH WELDING EQUIPMENT CORPORATION
Dept. CME-72, 2633 S.E. 4th St., Minneapolis, Minn.

WHERE TO BUY

Featuring Additional Products, Specialties & Services for The Construction Industry

New Armco Prefabricated
STEEL BUILDINGS

For Warehouse, Plant, Ofc, Farm Use, etc. (Not Corrugated. Not round.) Galvanized. Steel Sash, Sliding Truck Doors.

Nearly any width length. We or you erect. From $1.70 sq. ft.

Financing Arranged

TRANSAMERICAN CONST. CORP.
BOX 160, SMITHTOWN, N. Y.
SM'tn 2-2000

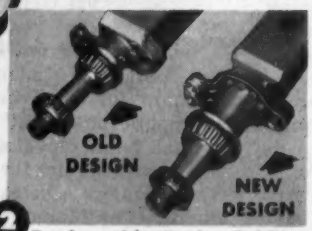
STOP that WATER

With FORMULA NO. 640, a clear liquid which penetrates 1" plus in concrete, brick, stucco, plaster, etc. Seals out water, dirt. Holds 20' head. Use outside and in. Preserves all absorbent materials. Sold 14 years. Quick, economical, sure. $3 in 55's. Free sample. See Sweet's.
HAYNES PRODUCTS CO., OMAHA 3, NEBR.

3 NEW FEATURES improve trailer performance

1 Lengthwise Decking

Tough oak planking runs parallel with length of trailer for extra strength and durability in end loading . . . is specially recessed for minimum loading height.



2 Replaceable Brake Spiders

Exclusive bolt-on arrangement (right) permits quick, low-cost spider replacement, without having to purchase or remove expensive axle assembly.

3 Cast Steel Spoke Wheels

Improved La Crosse design, with 6 individual rim lugs, saves 30 lbs. of useless dead-weight per wheel . . . simplifies alignment of wheel and rim.

. . . and now LACROSSE gives you all three!

Here are *three more* reasons why the best trailer buy in 20 to 40-ton capacity low beds is the *new* LaCrosse DF6T. This popular tandem axle carrier *now gives you* extra durable lengthwise decking . . . lighter weight spoke wheels . . . plus replaceable brake spiders. And that's not all! LaCrosse continues to give you *up to 2000 lbs. more PAYLOAD capacity per trailer* . . . plus bigger brakes with longer-lasting linings . . . still at the *lowest price in the industry!* Better get full details right now.

LC-28

Check Today!

LaCROSSE TRAILER CORPORATION, LaCrosse, Wis.

☐ Rush complete information on LaCrosse trailers:
☐ Specifications ☐ Prices ☐ Delivery
☐ Send name of nearest LaCrosse Distributor.
☐ We may buy a _____ton trailer about_____
(date)

Name _____Title_____
Employed by_____
Address _____
City _____State_____

LaCROSSE

America's Favorite **LOW-BED TRAILER**

Advertisers in this Issue

A McGRAW-HILL PUBLICATION

Member of Associated Business Publications and Audit Bureau of Circulations

A

Acrow, Inc. 20, 21
Adams Mfg. Co., J. D. 33
Air Placement Equipment Co. 119
Allis-Chalmers (Tractor Div.) 42, 43, 149
Allison Div., General Motors 142, 143
American Hoist & Derrick Co. 175
American Steel & Wire Div.,
United States Steel Corp. 102, 155
Austin-Western Co. 13

B

Baker-Lull Corp., The 6
Baker Mfg. Co., The 100
Barber-Greene Co. 131
Bay City Shovels, Inc. 91
Bethlehem Steel Co. 39, 176, 187
Black & Decker Mfg. Co., The 72, 73
Blackhawk Mfg. Co. 132
Blaw-Knox Co.
(Blaw-Knox Equipment Div.) 124
(Foote Constrn. Equipt. Div.) 146
Bonney Forge & Tool Works 106
Borne, Scrymser Co. 22
Broderick & Bascom Rope Co. 14, 15
Buch Mfg. Co. 174
Bucyrus-Erie Co. 41, 123
Buda Company Div.,
Allis-Chalmers Mfg. Co. ..... 2nd Cover
Butler Bin Co. 68

C

Carver Pump Co. 168
Caterpillar Tractor Co. 19, 27, 52, 69
Chain Belt Co. 192
Chevrolet Motor Div., General Motors 49
Chrysler Corp. (Industrial Engine Div.) 127
Cities Service Oil Co. 118
Clark Equipment Co.
(Construction Machinery Div.) 98, 99
Cleveland Trencher Co., The 171
Clipper Mfg. Co. 153
Construction Machinery Co's. 84
Continental Scaffolding Co. 154
Crucible Steel Co. of America 133

D

Delco-Remy Div., General Motors Corp. 80, 81
Delta Power Tool Div., Rockwell Mfg. Co. 151
Detroit Diesel Engine Div.,
General Motors Corp. 34, 35
Dixon Valve & Coupling Co. 148
Dodge Div. Chrysler Corp. 104
Duff-Norton Mfg. Co., The 24

E

Eaton Mfg. Co. 32
Eimco Corporation 138, 139
Electric Tamper & Equipment Co. 193
Euclid Road Machinery Co., The 36

F

Farquhar Div., A. B. The Oliver Corp. 140
Felker Manufacturing Co. 116
Fiske Bros. Refining Co.
(Lubriplate Division) 78
Flexible Steel Lacing Co. 2
Foote Construction Equipt. Div.,
Blaw-Knox Co. 146
Ford Motor Company (Ford Div.) 120
Foundation Equipment Corp. 96
Funk Aircraft Co. 185

G

Galion Allsteel Body Co., The 156
Gar-Bro Mfg. Co. 163
Gardner-Denver Co. 97
GMC Truck & Coach Div.,
General Motors Corp. 180
Goodall Rubber Co. 125
Goodrich Co., The B. F.
(Industrial Products Div.) 1
(Tire and Equipment Div.) 8
Gorman-Rupp Co., The 158
Gradall Div., Warner & Swasey Co. 46
Griffin Wellpoint Corp. 194
Gulf Refining Co. 137

H

Harnischfeger Corp. 107, 178
Haynes Products Co. 189
Hercules Powder Co., Inc.
(Explosives Dept.) 79

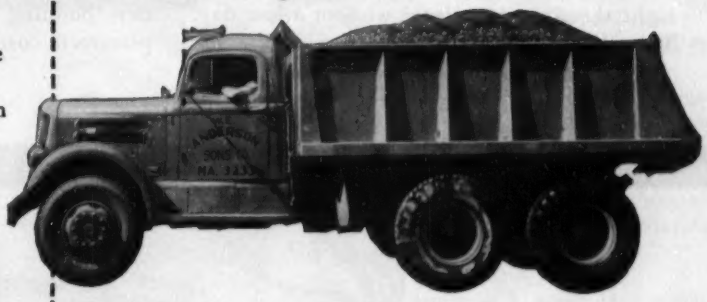
(Continued on page 193)

Rugged White "Ten-Wheelers"...

ON THE JOB day after day, they keep ready-mixed concrete on the move for W. E. Anderson Sons Co., Columbus, Ohio. These tandem-axle Whites with 4½-yard mixers have the stamina and durability to keep on tight schedules with the very minimum of downtime. The extra power of the Whites pays off first day in service and for more years!

Sturdy White Tandem Dumps...

It's the same quality story in aggregate delivery and stock piling by W. E. ANDERSON SONS CO. White tandem axle dumpers with nine yard capacity. Plenty of White Mustang Power for the big loads and every unit sturdy and dependable without sacrificing payload.



AND NOW THE NEW "CENTIPEDE"

for W. E. Anderson Sons Co., Columbus, Ohio

Here's the newest of the famous Whites in ready-mix service—the White Steering Pusher "Centipede". Better weight distribution and flotation within state limits...maneuverability and road stability even on rugged terrain . . . and economical Mustang power! Handles 6-yard mixer —24,000 lbs. payload and 100 gallons of water within state limits.

Get facts about this great line of Whites for *your* business. See *your* White Representative!

White

THE WHITE MOTOR COMPANY, Cleveland 1, Ohio

FOR MORE THAN 50 YEARS THE GREATEST NAME IN TRUCKS

Contractor Saves 30¢ a Yard on 17-story Hospital Job

. . . It was done with Pumpcrete®

Using Rex Pumpcrete, *the pump that delivers concrete by pipeline,* the contractors on the $11 million Mayo Medical Center saved 30¢ per cubic yard in placing concrete.

Two Rex Pumpcretes, with a concrete crew of eight, placed a floor a week—working right through the winter without a lost day. The Pumpcretes delivered *all* concrete for floors and columns for this 17-story structure.

At the completion of the job, the twin six-inch pipe ran a total of 550 feet from the ground level mixing plant and had pumped concrete up 176 feet above the ground. Shortly after completing this job, both Pumpcretes were at new building sites, again keeping concrete placement costs low.

Over-all view of hospital with lower floors completed and concrete being placed on upper stories. Note twin pipeline entering building. Flexibility of this setup permitted spanning 250 feet between wings of building, easily . . . at low cost, saving erection of still another tower, as would have been the case using buggy method of concrete placement.

When Pumpcrete goes up . . . costs come down

If you're interested in seeing other types of jobs on which Rex Pumpcrete has cut the cost of concrete placement, we will be happy to send you copies of "It Was Done with Pumpcrete." There may be helpful data you can use to cut costs on your jobs. See your Rex Distributor or write Chain Belt Company, 4664 W. Greenfield Ave., Milwaukee 1, Wis.

CHAIN BELT REX COMPANY

CONSTRUCTION MACHINERY

MOTO-MIXERS® MIXERS PUMPS PUMPCRETES® PAVERS

Advertisers Index

(Continued from page 190)

Hetherington & Berner, Inc. 96
Hough Co., The Frank G. 103

I

Ingersoll-Rand Co. 164
International Harvester Co.
(Motor Truck Division) 170
Iowa Mfg. Co. 110
Irvington Form & Tank Corp. 179

J

Jackson Mfg. Co. 154
Jackson Vibrators, Inc. 193
Jaeger Machine Co., The 47
Johnson Co., C. S. 93

K

KSM Products, Inc.
(Stud Welding Div.) 10, 11
Koehring Co. 92, 93
Kohler Company 112
Kwik-Mix Co. 93

L

LaCrosse Trailer Corp. 190
Laughlin Co., The Thomas 186
Le Roi Company 30, 31
LeTourneau-Westinghouse Co. 76, 77
Lincoln Electric Co. 166
Lone Star Cement Co. 5
Lubriplate Div., Fiske Bros. Refg. Co. 78

M

McGraw-Hill Book Co., Inc. 189
Macwhyte Company 3
Malsbary Mfg. Co. 167
Marlow Pumps 28, 29
Marvel Engineering Co. 128
Master Builders Co. ..... 3rd Cover
Miller Research Engineers 101
Mine Safety Appliances Co. 7
Minneapolis-Moline Co. 82
Moretrench Corp. 45
Murphy Diesel Co. 184

N

Northwest Engineering Co. 9

O

O.K. Machinery Div., John C.
Motter Printing Press Co. 147
Oliver Corp., The
(Industrial Division) 115
(A. B. Farquhar Div. Conveyor Dept.) 140
Onan & Sons, Inc., D. W. 181
Owen Bucket Co., The 111

P

Pacific Car & Foundry Co. 129
Paris Mfg. Co. 162
Parsons Co. 93
Patent Scaffolding Co., Inc., The 38
Phillips Petroleum Co. 159
Phoenix Products Co.
(Metal Spinning Div.) 178
Pitman Manufacturing Co. 168
Powder Power Tool Corp. 108
Power Products Corp. 174

R

Ramset Fasteners, Inc. 71
Remington Arms Co., Inc.
(Industrial Sales Div.) 169
Rockwell Mfg. Co.
(Delta Power Tool Div.) 151
Rogers Brothers Corp. 12

S

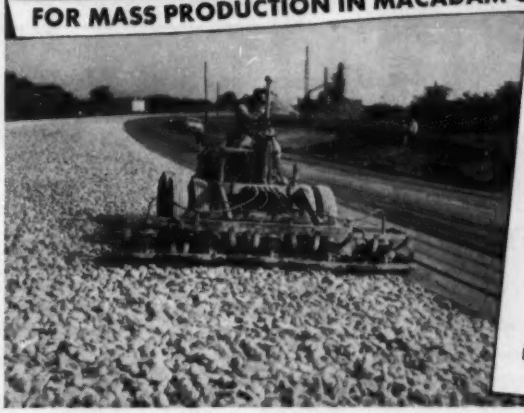
Safway Steel Products, Inc. 136
Salem Tool Co., The 147
Sauerman Bros. Inc. 185
Seaman Motors, Inc. 134
Shawnee Mfg. Co., Inc. 124
Sherman Products, Inc. 152
Shunk Mfg. Co. 122
Sinclair Refining Co. 89
Smith Co., The T. L. 195
Smith Welding Equipment Corp. 189
Standard Dry Wall Products, Inc. 177
Standard Oil Co. of California 145
Superior Concrete Accessories, Inc. 150
Superior-Lidgerwood-Mundy Corp. 135
Symons Clamp & Mfg. Co. 101

T

Talbert Construction Equipt. Co. 173
Texas Company 16, 17
Thermoid Co. 25
Thew Shovel Co., The 23
Timken-Detroit Axle Div.,
Rockwell Spring & Axle Co. 50, 51
Timken Roller Bearing Co. ..... 4th Cover
Transamerican Construction Corp. 189

(Continued on page 194)

FOR MASS PRODUCTION IN MACADAM CONSTRUCTION!



THE JACKSON ELECTRIC VIBRATORY COMPACTOR

QUICKLY COMPACTS AND FILLS ROCK COURSES OF REQUIRED THICKNESS!

• WORKING SPEEDS: 0 TO 60 FT. PER MIN.

• REVERSE TRAVEL SPEED: 5½ M.P.H.

MACADAM The JACKSON — in one pass — will sufficiently compact 12 inches of rock to support smooth rollers. In four passes, the JACKSON keys and compacts to final density. It takes just two passes for the JACKSON to completely fill voids from top to bottom of the course, when enough dry fines are spread on top in one application.

IN GRAVEL SUB-BASES (Blanket Course) 7" thick, at optimum moisture, the JACKSON in one pass has obtained densities exceeding 100% Standard Proctor. Vibratory frequency may be varied to suit conditions.

FLEXIBLE The JACKSON is available in a standard width of 13', 3". Units may be subtracted on the job to meet conditions requiring narrower widths. The 26" units can be detached and fitted with handles, providing self-propelled compactors for restricted areas, pavement patching, paving drives, compaction of granular soils in trenches, etc.

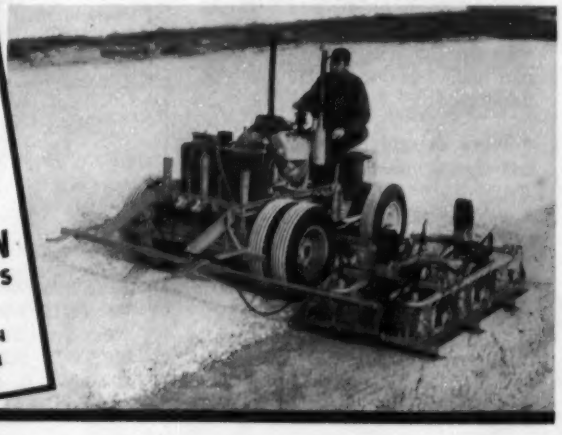
WIDENING STRIP COMPACTED IN ONE PASS

With simple equipment available, compactors may be assembled in tandem, 3 deep and in single or double row, and towed at the side of the tractor to give complete compaction of widening strip in one pass in all granular materials used for flexible base-course widening. Compactor bases of 12" width and up may be substituted for the standard 26" bases to fit any widening requirement.

See YOUR JACKSON DISTRIBUTOR OR WRITE to us for details of this extremely versatile, multi-purpose, money-making equipment.

JACKSON VIBRATORS INC.

LUDINGTON MICHIGAN



HOW TO HANDLE WET JOBS

#24 of a series

"FLOATING" DEPARTMENT STORE

Charleston, S. C.

Contractor: Mion Construction Co.
Pumping: Wellpoint Dewatering Corp.

HOW WELLPOINTS HELPED ELIMINATE PILES

THOUGH CONDITIONS of the job would ordinarily have necessitated use of piles, a far more economical plan was devised. This was to construct the basement in the manner of a "ship's hull," and it called for deep digging in a high-water-table area (without disturbing substrata support of adjacent 14-story hotel).

• Thus, the success of the plan depended on sure control of the ground water—no simple matter in the complex soil mixture of mud, sand, shells and old fill. A Griffin Wellpoint system around the 800-ft basement perimeter solved the problem perfectly, as 200 carefully placed points pulled water below the deepest excavation and held it with firm grip until the structure had sufficient weight to prevent flotation.

• When dependability counts, you can always count on Griffin.

GRIFFIN

WELLPOINT CORP.

881 East 141st Street, New York 54, N. Y.
Hammond, Ind. Houston, Tex. Jacksonville, Fla.

In Canada: Construction Equipment Co., Ltd.
Toronto Montreal Halifax

Advertisers Index

(Continued from page 193)

Transport Trailers, Inc. 152
Traylor Engrg. & Mfg. Co. 183
Twin Disc Clutch Co. 182

U

Union Metal Mfg. Co., The 37
Union Wire Rope Corp. 85
Unit Crane & Shovel Corp. 144
United States Steel Corp. 102, 155, 165
Universal Engineering Corp. 141, 157
Universal Form Clamp Co. 18
Upson-Walton Co., The 172

V

Viber Company 70

W

Waco Mfg. Co. 95
Warner & Swasey Co. (Gradall Div.) 46
Water Seals, Inc. 4
Waukesha Motor Co. 130
Wellman Engineering Co., The 94
Western Sales & Supply Co. 135
White Co., David 109
White Mfg. Co. 135
White Motor Co., The 191
Wico Electric Co. 121
Winslow Engineering Co. 126

■

SEARCHLIGHT SECTION

(Classified Advertising)

H. E. Hilty, Mgr.

Employment

Positions Vacant
Selling Opportunities Offered 194

Educational 194

Business Opportunities 194

CONSTRUCTION METHODS AND EQUIPMENT

330 West 42nd St., New York 36—LO 4-3000

E. E. WEYENETH, *Advertising Sales Manager*

HOWARD T. OLSEN, *Business Manager*

Sales Representatives

New York 36, 330 W. 42nd St.
H. T. BUCHANAN

Philadelphia 3, 17th and Sansom Sts.
R. H. LARSEN

Atlanta 3, 1321 Rhodes-Haverty Bldg.
R. H. SIDUR

Cleveland 15, 1510 Hanna Bldg.
W. C. BRADFORD

Chicago 11, 520 N. Michigan Ave.
F. G. HUDSON, KNOX BOURNE, D. J. McGRATH

St. Louis 8, Continental Bldg.
W. E. DONNELL

Dallas 1, First National Bank Bldg.
J. H. CASH

Los Angeles 17, 1111 Wilshire Blvd.
H. L. KEELER

San Francisco 4, 68 Post St.
R. E. DORLAND

Other Sales Offices
Detroit 26: 856 Penobscot Bldg.
Pittsburgh 22: 738 Oliver Bldg.
Boston 16: 350 Park Square Bldg.
London E.C. 4: 95 Farringdon St.

SEARCHLIGHT SECTION

(Classified Advertising)

EMPLOYMENT • BUSINESS EQUIPMENT — USED OR RESALE OPPORTUNITIES

REPLIES (Box No.):
Address to office nearest you
NEW YORK: 330 W. 42 St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

EMPLOYMENT

SELLING OPPORTUNITY OFFERED

SALESMEN. EXPERIENCED. For pump and wellpoint business. Established performance record. To go anywhere. Replies confidential. SW-1269, Construction Methods & Equipment.

EQUIPMENT—used-surplus

FOR SALE

Used concrete pavers, truck mixers, and pumpcrete. 19 Rector Street, Room 1205, New York City, N. Y. Phone: WHitehall 3-6141.

WANTED—Distributors and/or Manufacturers' Representatives

The well-established LUG-ALL WINCH HOIST is seeking distributors in uncovered territories. Well rated distributors who will carry an inventory are preferred—especially those servicing building contractors, maintenance superintendents, plumbing and heating dealers, factory and mine managers, etc. The Lug-ALL Winch-Hoist weighs only 8¾ pounds, sells for $35.25. Five year record of repeat business is impressive. Lug-ALL does the work of five men on block and tackle.

Write us fully and frankly, outlining your firm's experience and contacts. Mention other lines handled and extent of territory you cover. Your inquiry will be answered within 48 hours.

THE LUG-ALL COMPANY
WYNNEWOOD 68, PENNA.

WANTED

MECHANICAL SUPERINTENDENT

Experienced in mechanical and process piping work relating to refineries, chemical plants, compressor plants, paper mills and manufacturing plant. Must have first hand knowledge of piping, rigging, mill-wrighting, welding and boilermaker work. Location West Coast, principally California. Submit experience record, references, availability, salary expected.

P-1380, CONSTRUCTION METHODS
1111 Wilshire Blvd., Los Angeles 17, Cal.

ENGINEERS—FOREMEN—OFFICE MEN

Learn latest methods to organize and run work. Prepare for the top jobs.

Send post card for details

GEO. E. DEATHERAGE & SON
CONSTRUCTION CONSULTANTS
411 So. 5th Ave., Lake Worth, Florida

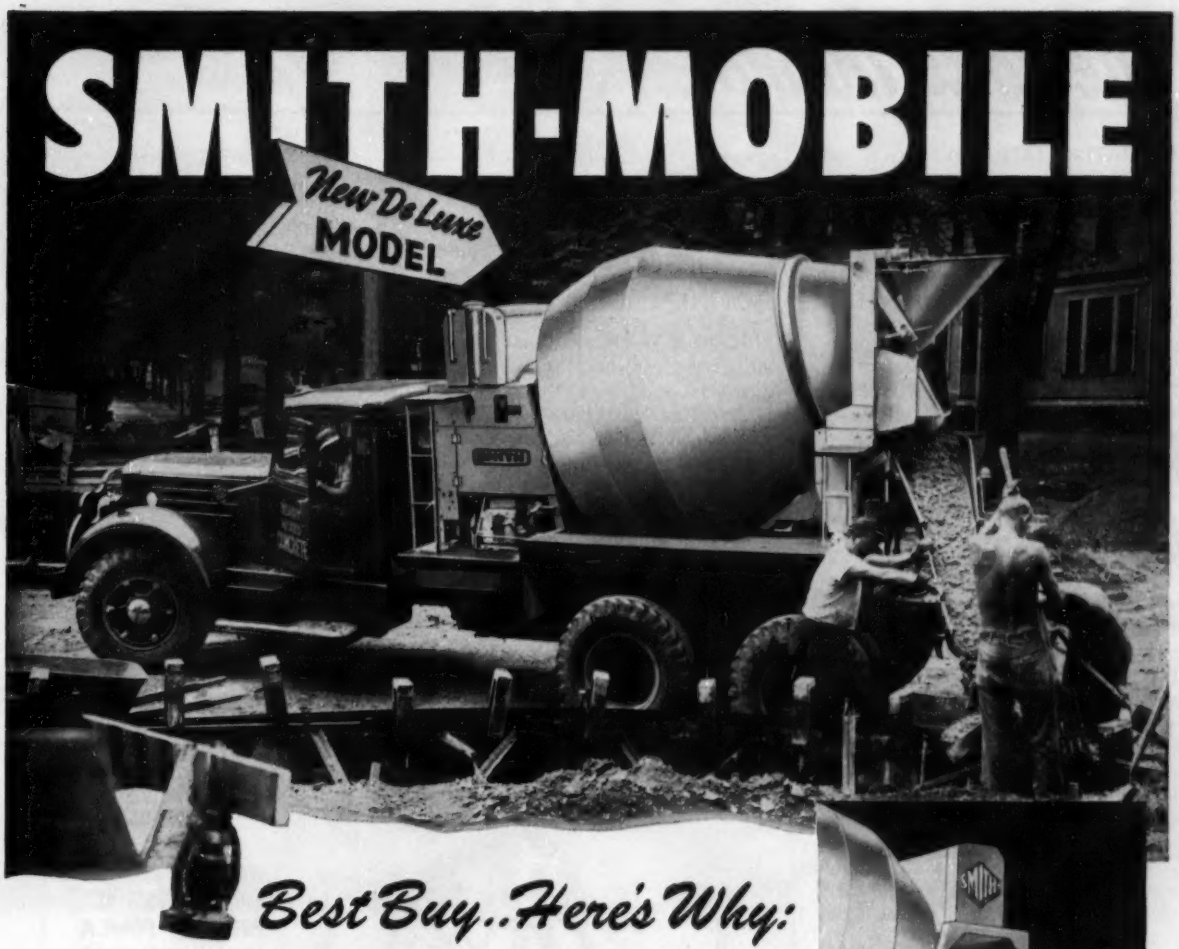
AVAILABLE

DESIGN of PRODUCT used universally in Construction Industry. Basically steel plate construction in small lots.

BO-1522, Construction Methods & Equipment
520 N. Michigan Ave., Chicago 11, Ill.

SMITH-MOBILE

New De Luxe MODEL



Best Buy..Here's Why:

- Completely Redesigned for Greater Efficiency than Ever Before
- Better Weight Distribution Allows Bigger Legal Payloads
- Gross Weight Cut Nearly 800 lbs.
- Overall Length Much Shorter
- Most Accessible Engine on Any Truck Mixer
- Two-Speed Transmission Built to Aircraft Specifications
- No Increase in Price, in Spite of Greatly Increased Quality

Note handy location of mixer engine. Every working part is easily accessible.

You Add Them Up...They Equal

The BEST TRUCK MIXER

You Can Buy Today!

SMITH — T. L. SMITH CO. MILWAUKEE U.S.A.

THE T. L. SMITH COMPANY
2851 North 32nd Street • Milwaukee 45, Wisconsin, U. S. A.
Affiliated with ESSICK MANUFACTURING CO., Los Angeles, Calif.

CONCRETE MIXERS

For BIGGER and BETTER Concrete Mixers and Truck Mixers . . . LOOK TO SMITH

Methods Memo . . .

OPERATORS GOT A BREAK through the H. O. Penn Machinery Co., Inc., Caterpillar dealer in the New York area who, together with Caterpillar Tractor Co., conducted an interesting series of meetings in January for the benefit of the Operating Engineers Union in Long Island. The meetings were spread over 8 evening sessions and attracted an average attendance of 250. The guests saw movies, exhibits and heard informative talks on the operation and maintenance of Caterpillar-built equipment, history of earthmoving, safety and other items of interest.

The idea for the meetings originated with William B. DeKoning, president of Operating Engineers Union, Locals 138, 138A and 138B, and is the "guinea pig" for similar teaching sessions expected to be held elsewhere.

We agree with a statement released by H. O. Penn: "This is a splendid example of the real desire of operators and mechanics to learn more about the equipment they are operating. The fact that these men work all day long and are still willing to attend these evening sessions, is an indication they are sincere in their effort to do a good job."

We think it is a wonderful idea and one all manufacturers and dealers should want to promote.

A COMPLETE PACKAGE of road paving equipment was rounded out the other day by Blaw-Knox Co. when it acquired the All Purpose Spreader Co. with its line of highway construction equipment. Blaw-Knox now can supply what it takes to build and modernize all types of roads with either asphalt or concrete, the company claims.

DICK TRACY HELPED the construction industry recently. This favorite comic page each Sunday features a "Crimestoppers" box, giving details on how boys and girls may help police detect and prevent wrongdoing. Several Sundays ago the Crimestopper pictured a bandaged small boy and two typical blasting caps. The message: "Blasting caps can maim and kill. Don't touch them! Call your police. (signed) Dick Tracy." Technical help came from the Institute of Makers of Explosives.

THE GAMBLERS who play Russian Roulette with heavy construction equipment (thoughtlessly) are portrayed in heart-stopping sequences in a motion picture ("The Gamblers") produced through the collaboration of the Construction Division, National Safety Council, and the Caterpillar Tractor Co. (See page 74.)

Don't fail to see it. Get it through your local Cat distributor and give the men an extra half-hour during the day to see it. It will pay boss and men alike to view this walloper on safety.

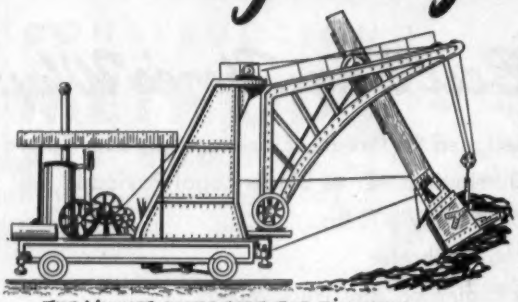
BACK TO SCHOOL went two of your editors recently, when they were privileged to sit in on one of the interesting and informative Bituminous Construction Conferences conducted by Barber-Greene Co. at its Aurora, Ill., headquarters.

B-G holds these worth-while 2½-day meetings periodically for mutual exchange of information and ideas about materials, equipment and methods for building bituminous roads. Those attending include people from contracting outfits, engineering firms, testing labs, oil companies and technical associations, along with various specialists from Barber-Greene.

The conference covers all phases of bituminous construction, with emphasis on means of obtaining better results at less cost. In this way, Barber-Greene is doing a real service to the whole industry—as well as to the buying and riding public—and is to be congratulated on its enterprise and farsightedness.

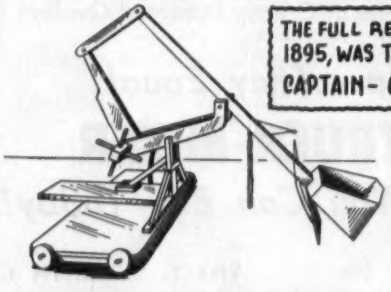
As It Was in the Beginning

The Yankee Geologist



IN 1836, TWENTY YEAR OLD WM OTIS BUILT THE FIRST POWER SHOVEL KNOWN AS THE Yankee Geologist. -(AT LEAST 25 YEARS AHEAD OF ITS TIME) IT RAN ON A TEMPORARY RAILROAD TRACK AND HAD A ONE YARD BUCKET

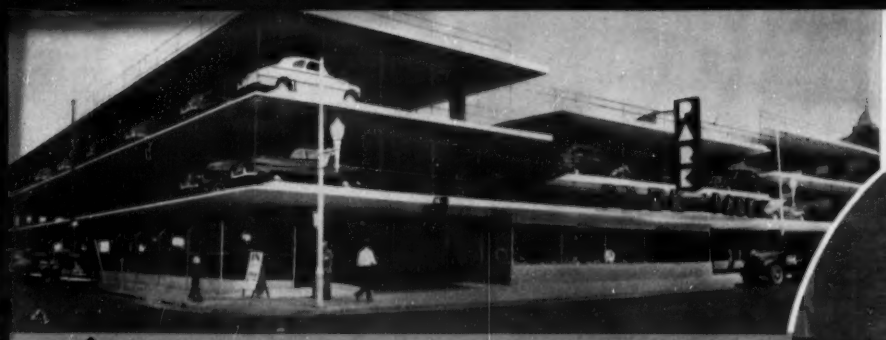
THE YANKEE MOVED DIRT FOR 3¢ A YARD. DID THE WORK OF 80 SHOVELERS AND COST $6.00



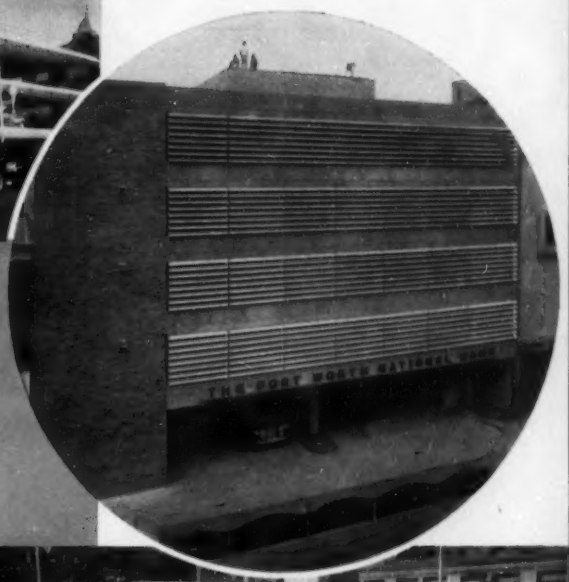
THE FULL REVOLVING SHOVEL, BUILT IN 1895, WAS THE IDEA OF AN ORE STEAMER CAPTAIN - CAPTAIN RICHARD THEW.

TODAYS HUGE SHOVELS ARE A FAR CRY FROM THESE EARLY MODELS. NOW 45 AND 50 YARD MODELS CAN MOVE OVER 100,000 YARDS A MONTH - AS MUCH AS 3300 HAND SHOVELS WOULD HAVE MOVED.

THIS ANCESTOR TO ALL POWER SHOVELS WAS USED IN EUROPE HUNDREDS OF YEARS AGO - BUT NOT FOR DIGGING - ONLY FOR LOADING ALREADY LOOSENED MATERIALS.

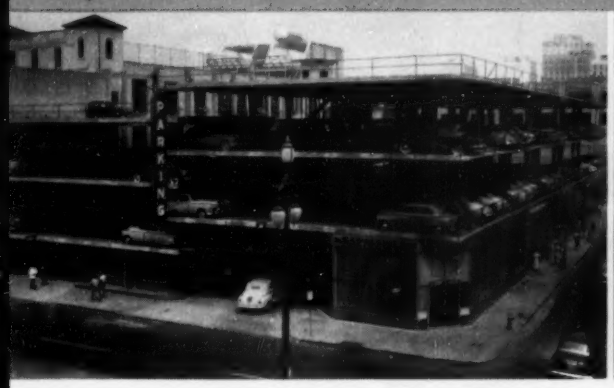


Miami Parking Garage, Miami, Florida. Archt.—Robert Law Weed; Contr.—Gust K. Newberg—both of Miami, Fla. Pozzolith Ready-Mixed Concrete supplied by Maule Industries, Miami Beach, Fla.

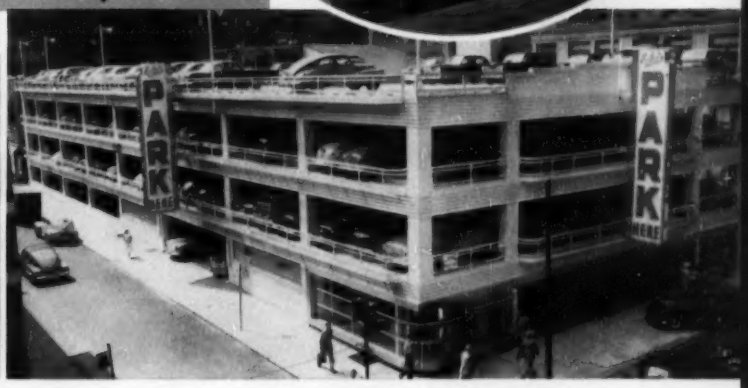


Fort Worth National Bank Garage, Fort Worth, Texas. Archt.—Preston M. Geren; Contr.—Thos. S. Byrne, Inc.; Pozzolith Ready-Mixed Concrete supplied by Fort Worth Sand & Gravel Co.—all of Fort Worth, Tex.

Blaise Parking Garage, New Orleans, La. Archt.—Diboll-Kessels & Assoc.; Contr.—Gervais F. Favrot Co.; Pozzolith Ready-Mixed Concrete supplied by Jahncke Service, Inc.—all of New Orleans, La.



Eglin's Garage, Philadelphia, Pa. Archt.—W. F. Silliman; Engr.—J. E. Good; Contr.—John A. Robbins Co., Inc., Pozzolith Ready-Mixed Concrete supplied by Warner Co.—all of Philadelphia, Pa.



POZZOLITH READY-MIXED CONCRETE

In Nation's Outstanding Garages

These four modern parking garages are representative of the many important structures of all types which have been built with Pozzolith Ready-Mixed Concrete.

Among the reasons for the wide acceptance and use of Pozzolith Concrete are the following:

- EASIER PLACEABILITY — for lower placing costs
- MINIMIZED SEGREGATION — for better appearance
- REDUCED SHRINKAGE — for less cracking
- LOWER PERMEABILITY — for less "waterproofing" expense
- INCREASED BOND-TO-STEEL — for better construction
- GREATER DURABILITY — for longer life concrete

Pozzolith produces these benefits *at lower cost than by any other means.* Why? Because it disperses cement, reduces unit water content and entrains the *optimum* amount of air. *Full information on request.*

Over 600 Leading Ready-Mixed Plants
Are Producing Pozzolith Ready-Mixed Concrete

the MASTER BUILDERS Co.

LEVELAND 3, OHIO — Subsidiary of American-Marietta Company — TORONTO, ONTARIO

CARBIDE INSERT? or MULTI-USE?
LOCATION: Route 128, Essex-Manchester-Gloucester, Mass.
OPERATING CONDITIONS: Drilling hard, abrasive granite.

TIMKEN® carbide insert bits give extra footage in hard, abrasive granite for Gil Wyner Company, Inc.

IN excavating 375,000 cubic yards of extremely hard and abrasive granite for Massachusetts Route 128, Gil Wyner Company, Inc. gained extra footage with Timken® carbide insert bits!

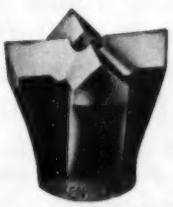
Timken carbide insert bits are most economical for highest speed through hard and abrasive ground. They're also best for constant-gage holes, small diameter blast holes and very deep holes.

When it comes to ordinary ground, however, Timken multi-use bits are the most economical. With correct and controlled reconditioning, they give lowest cost per foot of hole when full increments of steel can be drilled.

With *both* Timken carbide insert and multi-use bits, you can solve your drilling problems. Both are interchangeable in each thread series. Many different Timken bits fit the same threaded drill steel. You can switch bits quickly and easily as the ground changes—right on the job!

Both Timken carbide insert and multi-use bits are made from electric furnace Timken fine alloy steel, have special shoulder unions that protect threads from drilling impact.

Let our Rock Bit Engineering Service help you select the best bit for your job—whether carbide insert, multi-use or both. Write The Timken Roller Bearing Company, Rock Bit Division, Canton 6, Ohio. Cable address: "TIMROSCO".



Timken threaded multi-use rock bit

Timken threaded carbide insert rock bit

your best bet for the best bit ... for every job

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.